

PERFORMING DEMANDING WORK IN THE HEAT IS A HIGH-STAKES GAME: PLAY IT SAFE

How Heat Slows Your Brain Before Your Body

Key Message

Heat stress can affect mental performance just as much as physical. A slowdown in cognitive function can present themselves before physical symptoms appear, creating dangerous situations for workers.

Overview

- Your body prioritizes cooling itself over cognitive function when your core temperature rises.
- Cognitive effects can present themselves before physical effects do, impairing important decision-making abilities that keep you safe in high-voltage scenarios.
- Research shows that an increase in core body temperature of just 1-2 degrees can slow reaction times by 10-15% (source) as your body “reroutes” energy from other systems to cool the body.

Safety Hazards Due to Slower Cognition

Key Message

Your cognitive function is equally as important as your physical abilities when it comes to linework. Working around high voltage lines requires mental aptitude and a strong sense of focus to not only keep yourself safe, but also your brothers and sisters on the line.

Overview

- Heat-impaired cognition leads to missed safety checks, delayed reactions to changing conditions, and reduced situational awareness, all important aspects to safety of the trade.
- Within the same line, workers may skip steps in established procedures, misjudge distances, or fail to notice warning signs from the equipment.

- High temperatures (and extreme weather in general) create the busiest times within the line industry. Working in high-pressure conditions with a risk to cognitive and physical function is *not* a good combination.
- Studies conducted in other high-risk industries show that heat stress contributes to a 15-20% increase in workplace accidents, with most incidents involving errors in judgement as opposed to physical injury.

Long-Term Impact on the Body from Repeated Heat Stress

Key Message

Repeated exposure to heat stress or heat illness adds up overtime. Like any other injury to the body, this can accumulate over an extended period causing lasting damage and, in some cases, end careers.

Overview

- Death by a thousand cuts: While a single hot day may just leave you exhausted, years of repeated and intense heat exposure can create lasting damage, particularly on organs like the kidneys, heart, and brain (sources).
 - o Kidneys are constantly stressed to maintain a balance of fluids in the body
 - o Heat increases your heart rate, thickening the muscle as it works overtime to pump blood to cool body temperature
 - o The brain can suffer from years of reduced cognitive capacity
- Consistent exposure to harmful UV rays increased your risk of skin cancer. In rare cases, a sunburn from a single day with high exposure can result in 2nd, or even 3rd degree burns.
- These changes happen gradually and can sometimes result in an inability to perform physically and mentally demanding tasks.

Why “Toughing it Out” isn’t a Proper Solution to Heat

Key Message

Being physically and mentally tough could be considered a prerequisite for linework and can serve workers well in many of the trade’s demanding situations. However, when it comes to safety, “toughing it out” is best separated from the discussion. Proper preparation and safety



protocol are what gives workers the ability to remain tough in the field, and lack thereof is never a substitute for toughness.

Overview

- Pushing through severe heat isn't the same as enduring other forms of discomfort – it's more akin to ignoring failing brakes on your truck simply because you've gotten used to how they feel now.
- Each time you "tough out" intense heat without proper preparation, you are potentially causing lasting damage that can accumulate overtime.
- A heat stress incident can result in lasting neurological damage, including chronic kidney disease (source), and heart damage (source).
- Often, workers who are more experienced are ones who are more likely to ignore their body's warning signs as they've become more accustomed to enduring hard physical labor in tough conditions; what feels like dedication can be a path to premature disability.

How Crews can Advocate for Better Policies, Gear, and Hydration

Key Message

Effective advocacy combines safety knowledge with practical solutions that benefit both workers and operations. The key to good advocacy is not presenting heat safety as an additional burden, but rather an enhancement that both protects workers and increases performance during some of the most demanding months of the year.

Overview

- Successful advocacy starts with understanding that improvements to heat stress related safety protocol benefits everyone.
- Knowledge of heat stress prevention helps reduce accidents, improves productivity, and protects the company's most valuable assets – highly skilled workers.
- Examples of proactive solutions:
 - o Rotating assignments during peak heat
 - o Investing in cooling equipment and plenty of hydration to take to the job site rather than relying on workers to carry this themselves
 - o Investing in PPE that effectively reduces exposure to heat stress (UV protection, moisture-wicking, etc.)



- Tracking heat-related incidents and correlations in weather and productivity, providing data-driven evidence toward the effectiveness of these policies

Championing Culture Change Toward Proactive Heat Safety

Key Message

Real change occurs when heat safety becomes as ingrained and respected as other similar safety procedures. When the most respected workers on a crew prioritize heat safety, others will follow naturally.

Overview

- A change in culture happens from the ground up, led by those with influence (typically more tenured and respected lineworkers).
- Just as electrical safety evolved from “tough guys take risks” to “smart workers follow protocols”, heat safety can undergo a similar transformation.
- Create an environment that fosters open discussion around heat management strategies, proper breaks in hot weather, and treating hydration as essential to the job.

KEY MESSAGING THEMES

Reframing Heat Safety as Competency

Positioning heat management as a skilled trade practice and a risk of the job as opposed to something you “get used to” or more comfortable with over time.

Heat Stress is a “Silent” Threat

Unlike other workplace hazards, the dangers of heat stress can often be invisible and come on quickly without warning. Due to its hidden nature, protecting workers from this danger on the job requires proactive procedures – just as a hard hat is worn in preparation of expected danger as opposed to only when you are actively experiencing it.



From the Perspective of Career Investment

Better heat safety leads to longer career sustainability for lineworkers, just as proactive injury prevention would for any athlete or person who uses their body for work. Continued exposure to heat injury forces vital organs to work overtime, and these small incremental stressors can add up to more serious health risks in the future.

Better On-The-Job Performance in Periods of High Demand

Presenting heat safety as a crew performance indicator/multiplier rather than a drag on productivity or more safety red tape. A well-hydrated and comfortable crew is more energized, has better focus and cognitive ability, and will logically keep each other safer than a crew without these qualities or protections.

Proactive Planning for Heat Stress

Elevate heat safety planning to the same status as other essential job-related safety preparedness. Just as crews check weather conditions for storms or verify work equipment for dangerous tasks, heat planning should also be standard operating procedure with safety checks like proper hot-weather PPE, ensuring hydration, and protecting the skin from harmful UV rays.

The Toughest Workers are Also the Smartest

While the demands of the trade do require individuals to be mentally and physically tough, actively putting oneself in harm's way is not an opportunity to increase toughness. In fact, proper safety preparedness allows workers to better prepare for unforeseen circumstances and endure scenarios more than those who aren't properly prepared.

Encourage Evidence-Based Decision Making

Ground all recommendations in concrete data with real-world examples rather than relying on theoretical health advice. Use statistics from similar occupations that are exposed to the elements, documented heat-related incidents, and measurable performance impacts to support recommendations. Use an appropriate level of concern about heat stress without overwhelming readers or fear mongering; acknowledge this is a serious issue while providing clear, simple, and actionable/reasonable steps to reduce risk.