



Weekly Safety Tip

What is a BESS and What Are the Workplace Risks?



BESSs



What Is a Battery Energy Storage System and What Are the Workplace Risks?



Traditional batteries are rapidly being replaced by lithium-ion batteries.

While they have long been in place in small forms for consumer electronics like cellphones and laptops, large-scale lithium-ion battery energy storage systems (BESSs) are now powering or backing up equipment like uninterrupted power sources, data centers, hospital imaging systems and more.

Compared to a traditional lead acid or nickel-based batteries, lithium-ion batteries have higher energy density, lower maintenance, higher performance and better longevity.

They are also quite safe; only 1 in 10 million lithium-ion batteries fails, according to the nonprofit [Fire Protection Research Foundation](#).

"But when they go bad, they go *really* bad," says James Trudeau, a 30-year veteran of the energy field and a former marketing manager with UL, Underwriters Laboratory.

When a lithium-ion battery fails, it almost always catches on fire and can lead to explosion, [which can cause massive damage, injury and death](#).

While the risk is alarming, Trudeau offers this advice: "Don't worry about it, just plan for it."

What Is a Battery Energy Storage System?

A battery energy storage system is a type of energy storage system that uses batteries to store and distribute energy as electricity. BESSs are often used to enable energy from renewable sources, like solar and wind, to be stored and released.

Lithium-ion batteries currently dominate storage technology for large-scale systems.

"You're all going to be dealing with this in some way or another," Trudeau says, pointing to the switch to lithium-ion-powered electric vehicles, corporate focus on environmental, social and governance (ESG) standards driving electrification, and the continued trend to replace traditional lead acid batteries with lithium-ion versions.

Weekly Safety Share



When Are the Best Times to Consume Caffeine?



HEALTH & WELL-BEING SHARE

Dave Varwig
for SCNWO



When Are the Best Times to Consume Caffeine?



Billions of people worldwide consume caffeine as a quick and easy pick-me-up.

But most use the central nervous system stimulant commonly found in coffee, dark chocolate, tea, and soda as a broad brush rather than a precision scalpel — and to their detriment.

For maximum effect, **caffeine is best used sparingly**.

That's because just a few weeks of habitual consumption (as little as one cup of coffee per day) causes physiological dependency.

Caffeine's stimulant effect arises by blocking certain receptors in the brain. These receptors prompt fatigue and tiredness when filled with adenosine molecules, produced as we exert ourselves during waking hours.

But **the more caffeine we regularly consume, the more receptors the brain creates**. More receptors translate to greater feelings of drowsiness when filled with adenosine.

So **people who gulp down numerous coffees per day effectively feel more fatigued**, and their caffeinated habit simply brings them back to the baseline level of alertness they enjoyed before becoming caffeine "junkies."

The best times to consume caffeine

That's why it's wise to selectively target one's caffeine consumption. Published research has provided a few tips on the matter.

For starters, it's often best to hold off on your morning coffee for a few hours, rather than downing it first thing.

The grogginess that many feel soon after waking typically wanes within about 30 to 45 minutes, when levels of cortisol — a hormone that boosts alertness and focus — peak.

So you might be able to replace that early latté with a light, slightly sugary breakfast (think yogurt, cereal, or fruit) instead and enjoy a similar stimulating effect.



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