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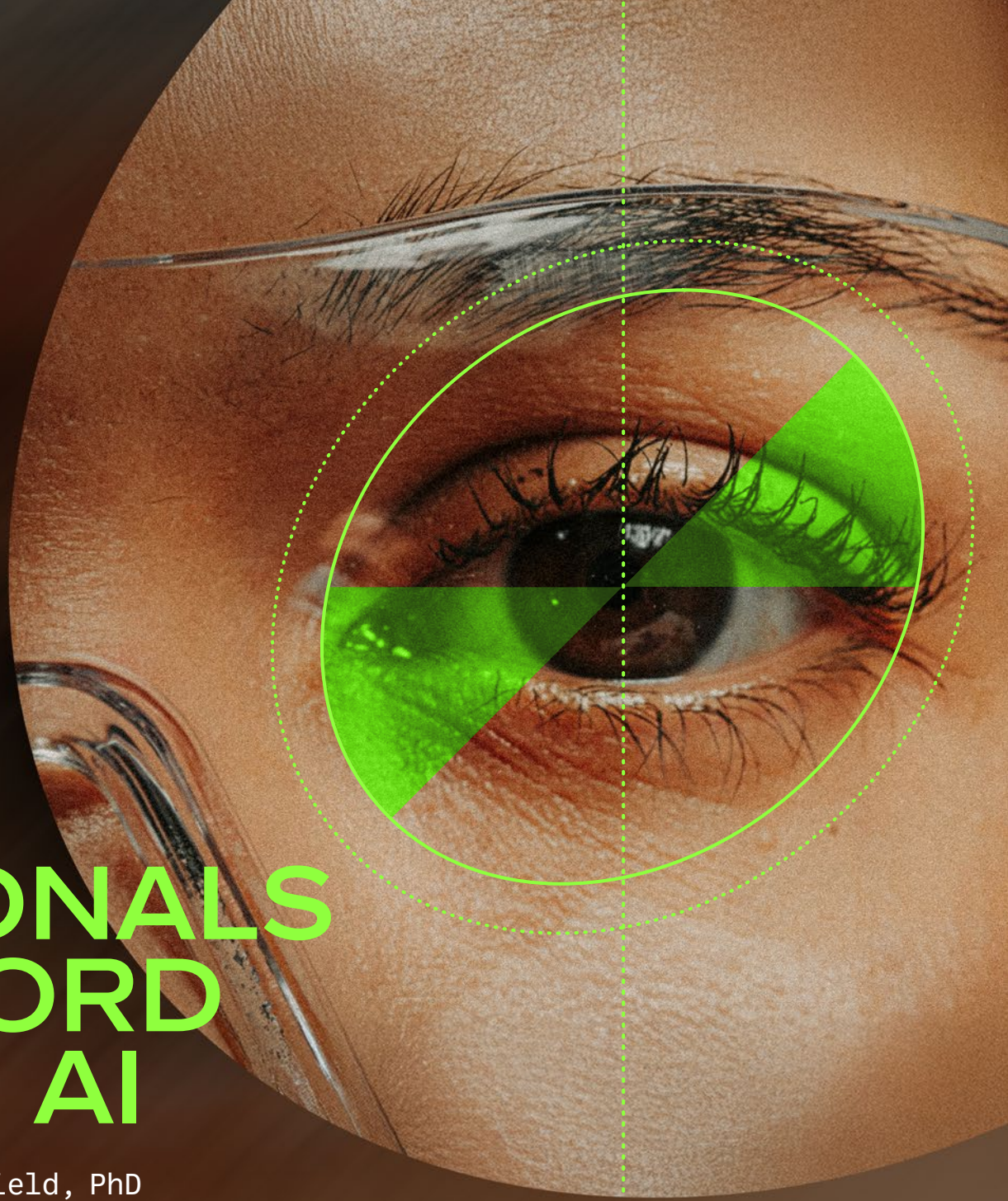


WHY EHS PROFESSIONALS CAN'T AFFORD TO IGNORE AI

By Phil Molé, MPH and Dr. Julia Penfield, PhD

TABLE OF CONTENTS

INTRODUCTION

The world of EHS is changing fast. You're facing more pressure than ever—whether it's working through a giant to-do list, managing a flood of safety data, or finding better ways to protect your people. You may also be hearing more about artificial intelligence (AI) and machine learning (ML), sometimes in the context of news stories or office applications, but also maybe in the context of EHS management.

If you're thinking, "AI doesn't apply to what I do," you're not alone. Many EHS professionals still see AI as something for the tech world—too complex, too costly, or just not practical. But that perception belongs to yesterday's world. AI is no longer future tense – it's here, and it's already making real differences in the EHS world, helping professionals like you protect their people and shift from a reactive to a proactive management approach.

This white paper will help you understand the relevance of AI to your job. It's about giving you the clarity and context you need to make informed decisions—and to see how AI can support your goals, not replace your expertise.

Whether you're skeptical, curious, or already exploring AI-powered tools, we'll walk you through why AI matters for EHS—and how it's being used right now to solve real problems and give professionals like you the insights needed to assess and control risks **before** injuries happen.

No matter where you are in your AI journey, the key takeaway is simple: you can't afford to ignore it.

THE PERSEVERANCE OF SEVERE INJURY AND FATALITY (SIF) NUMBERS

If you're reading this, you're probably an EHS professional, or at the very least someone with a personal stake in EHS. Here's an easy question for you: Why do you do what you do?

Most people in the EHS space probably don't need to think much about their answer. They know they're in this field because they care about keeping people safe. They know their workplace has risks, and they know about the risks to themselves, in terms of not just that the work environment hazards they're also exposed to, but also the psychological hazards – the anxiety that comes from caring so much about the safety of people that it **hurts you** when someone gets hurt on your watch. You understand these risks, and you still signed up for the job, and you're always looking for ways to do the job even better.

> "YOU UNDERSTAND THESE RISKS, AND YOU STILL SIGNED UP FOR THE JOB, AND YOU'RE ALWAYS LOOKING FOR WAYS TO DO THE JOB EVEN BETTER.

The sad reality is that injury prevention is hard work, and progress doesn't always follow a linear path. In fact, **despite increasing regulatory oversight and the continuing efforts of EHS professionals, the raw numbers and rates of the most severe injuries, involving days away from work (DAFW), restricted duty, or even fatalities, have remained stubbornly high over the past two decades**.

In VelocityEHS's 2023 analysis of OSHA and BLS data, we noted that total recordable case rates, days away, restricted or transferred (DART) case rates, and fatality rates (all normalized based on numbers of employees) increased from 2016 to 2019. The numbers for all three case types then drop in 2020, reach their lowest point in 2021, and then climb partly back toward their previous levels in 2022. Some of the disruptions brought by the pandemic seem to be at play here. The early stages of the pandemic brought significant headcount reductions in the early stages, but there was then rabid growth of payrolls to near pre-pandemic levels, especially during 2021. Some drops in injury rates in this period may be due to reduction in business activity generally, and some of it might be because the hiring rate in 2021 and possibly late 2020 was significantly faster than the injury rate. In other words, because average injury rates are low overall, periods of accelerated workforce growth will significantly "dilute" the rate.

One thing to realize here is that the total recordable incident rate includes all workplace incidents that meet one or more OSHA recording criteria, such as medical treatment beyond first aid, days away from work, etc. But the total incident rate includes a number of incidents that had more serious risks than the outcome itself may indicate, and which can often get overlooked due to a focus on outcome alone. Many of the trends you'll learn about now happen due to these "hidden" or underestimated risks.

For example, from 2016 through 2019, while rates for all three case types increased, **the rate for DART cases increased significantly faster than the rate for total recordable cases. And during the period from 2021 to 2022, when rates for all three cases bounced up from their low in 2021, the rate for DART cases once again increased significantly faster than the rate for total recordable cases increased**.

The fatal work injury rate also rose to 3.6 fatalities per 100,000 full-time equivalent (FTE) workers from 3.4 per 100,000 FTE in 2020, which was also higher than the 2019 pre-pandemic rate of 3.5.

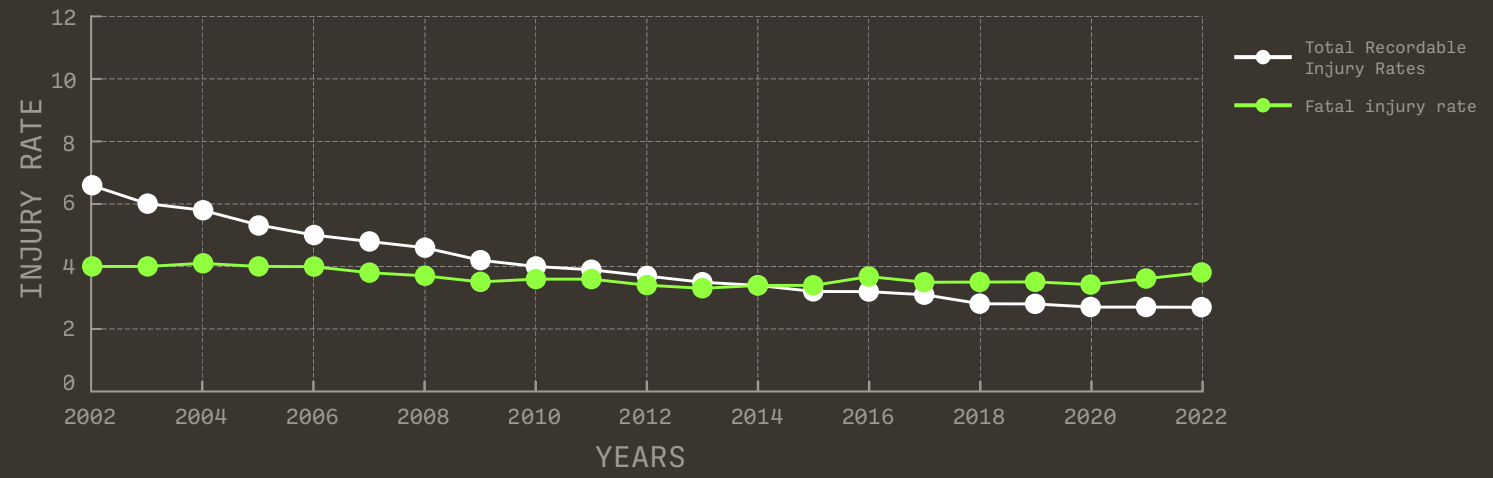
You can get deeper insights into the persistence of this issue by looking at Figure 01, which compares total recordable injury rates and fatal injury rates over the 20-year period from 2002 to 2022.

The trends here are telling. The **normalized rates for serious incidents—including fatalities, which are the worst possible outcome, increased more than the rates for less serious incidents in recent years**. Additionally, Figure 01 shows that the fatal injury rate has remained extremely consistent between 2002 and 2022. **There's been more success in reducing the rates and numbers of less severe incidents than there has been in reducing fatality numbers.** That's not the expected outcome if we were doing well at assessing risks and addressing them before serious incidents could happen.

We can also see some concerning trends when we take a closer look at the most recent BLS numbers. The chart in Figure 02 shows top industries for restricted duty cases based on 2024 BLS data.

FIGURE 01

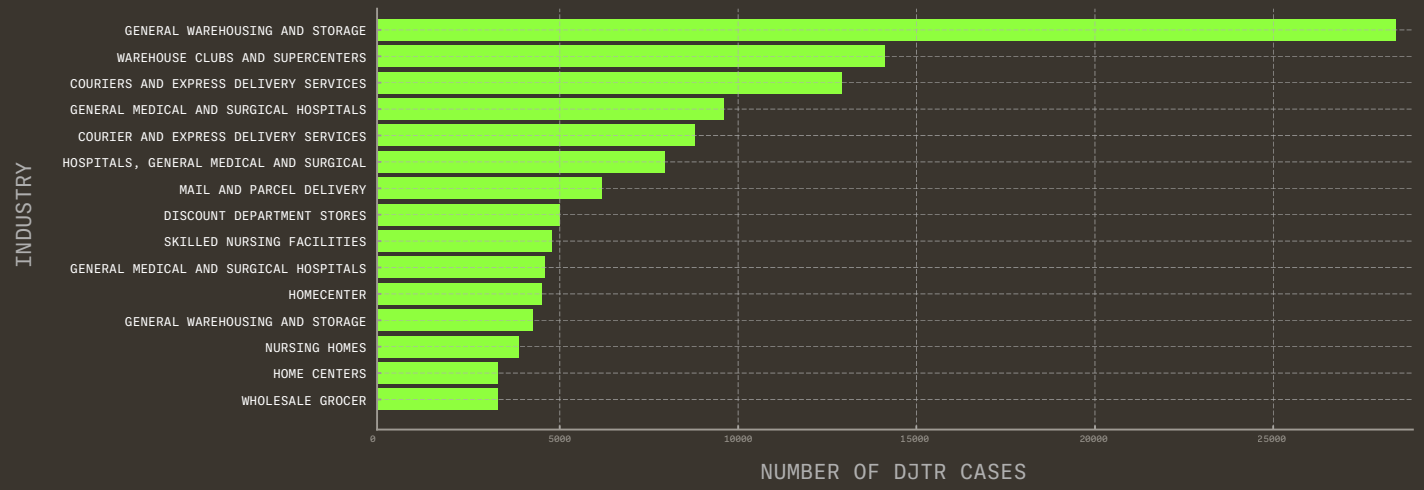
U.S. WORKPLACE INJURY RATES (2002-2022)



SOURCE:
U.S. BUREAU OF LABOR STATISTICS

FIGURE 02

TOP INDUSTRIES BY RESTRICTED DUTY CASES (DJTR) - 2024



SOURCE:
U.S. BUREAU OF LABOR STATISTICS

In general, we see that the same industries with high numbers of restricted duty cases also have high numbers of DAFW cases, which isn't surprising, since the high level of risk in these industries makes serious injury and illness outcomes more likely. In most cases, industries have fewer DAFW cases than restricted duty cases, but the number of DAFWs for some industries (e.g. the courier and express delivery sector) is actually higher than the number of restricted duty cases.

A more worrying version of this trend is at play with fatality numbers. As we'd expect, there's overlap between the sectors that have the highest number of fatalities and the sectors with the highest numbers of restricted duty and DAFW cases. For example, the transportation and warehousing sector appears near the top of all those lists, in part because of the varied environments drivers must navigate and the lack of control over external factors, such as road and weather conditions. However, there are industries in the top five for fatalities that were **not** among the top industry sectors for DAFW and restricted duty cases, like the construction industry, which came in second in overall fatalities. This datapoint tells us that there are many severe unassessed and uncontrolled risks in the construction industry, because it has a higher proportion of injuries that result in the most severe outcome (fatality) rather than restricted duty and DAFW cases. This result **highlights the importance of a proactive approach to safety, focused on identifying, prioritizing and controlling risks**.

Another consequence of these persistent numbers and rates of serious injuries is that OSHA and other regulatory agencies are continuing to focus their efforts on the industries and job tasks where data shows major injuries to be happening. For example, OSHA recently renewed its National Emphasis Program (NEP) on amputations, targeting industry sectors with high rates of amputation injuries based on BLS data.

Taken together, **the BLS and OSHA data suggest not only that the rate of significant injuries remains stubbornly high, but also that the reason the numbers remain high is that EHS professionals don't have the resources and bandwidth required to be as proactive as they need to be to assess and control risks before they cause a serious injury**.

The lack of proactivity isn't because EHS professionals don't want to be proactive. They do, but they have difficulty doing so because time constraints, resource constraints, and inefficiencies in collecting and assessing data make it very difficult to shorten their normal to-do list, let alone shift to a more proactive approach.

As one EHS professional I talked to put it, **"I'm doing everything I can, and the injuries are still happening."**

"This persistence highlights a fundamental problem — identifying and mitigating serious injury and fatality risks at scale remains too difficult to do manually," Dr. Julia Penfield, Vice President of Research and Machine Learning at VelocityEHS, explained.

This is the problem that EHS professionals struggle against – the problem that keeps them up at night.

AI AND ML CAN PROVIDE ACTIONABLE AND LIFE-SAVING INSIGHTS

AI and machine learning are starting to help EHS professionals overcome this problem, as you'll soon see.

First, though, you might need a little more context about AI. We hear a range of opinions on AI, with many EHS professionals expressing an interest in learning more about AI and how it can help them do their job better. Others, like those who approach us at our exhibit booths at conferences, express a kind of frustration with how much they're hearing about AI, and don't yet see the relevance of it to their job. Let's talk about it.

Maybe you're among the EHS professionals who are skeptical about AI, and wonder if it's not just all empty "buzz" – the latest example of an overstated case for the benefits of modern technology. In your defense, there have been plenty of such overstated cases. For example, maybe you attended a high-profile talk by "industry insiders" years ago and took in a lot of hype about how drones were the wave of the future in EHS, but if you're like the overwhelming majority of EHS professionals, drones weren't relevant to you then and aren't relevant to you now.

When it comes to understanding the real-world impacts of technological innovations, there's hype, and then there's the reality on the ground. As an EHS professional, it's a given that it's the latter that **you're** interested in. And, **when you compare the status of AI in 2025 with these technological claims of years past, you'll find that it's a different story altogether. AI is here now, it's already being widely used to improve safety and health outcomes, and its influence will continue to grow, especially in the world of EHS**.

AI USE CASES IN THE MEDICAL AND HEALTH INDUSTRIES

Let's start by looking at some wider context for AI uses in the medical and health industries. AI already has made a big impact in these fields, and their use cases are "adjacent" to EHS in attempting to improve human health and safety.

For example, a recent article in *Harvard* Gazette (2025) explores AI's role in improving clinical decision-making, medical education, and healthcare delivery. The article also provides real-world examples—such as an AI-informed diagnosis of tethered cord syndrome when doctors initially missed it—and highlights how systems providing second opinions are changing the doctor-patient relationship.

A fascinating piece in World Economic Forum (2025) provides a global perspective on how AI is bridging healthcare gaps—especially in regions with limited access to care. For example, AI-powered tools help to diagnose fractures, triage patients, and detect early disease signs. A particularly interesting finding was that a new AI software is "twice as accurate as professionals at examining the brain scans of stroke patients." Two UK universities trained the software on a dataset of 800 brain scans of stroke patients and then trialed it on 2,000 patients, and found that the AI model, in addition to having a high accuracy, was also able to identify the timeframe in the stroke happened, which is important information for healthcare professionals.

A recent article in *Forbes* (2025) describes how AI and data science are revolutionizing drug discovery and diagnostic processes. Historically, drug discovery relied heavily on trial and error, with long timelines and high costs. According to the article, use of AI models shortens timelines, reduces costs, and improves accuracy, and is used in every stage, from early molecule screening to clinical trials, making the drug development cycle more efficient and targeted.

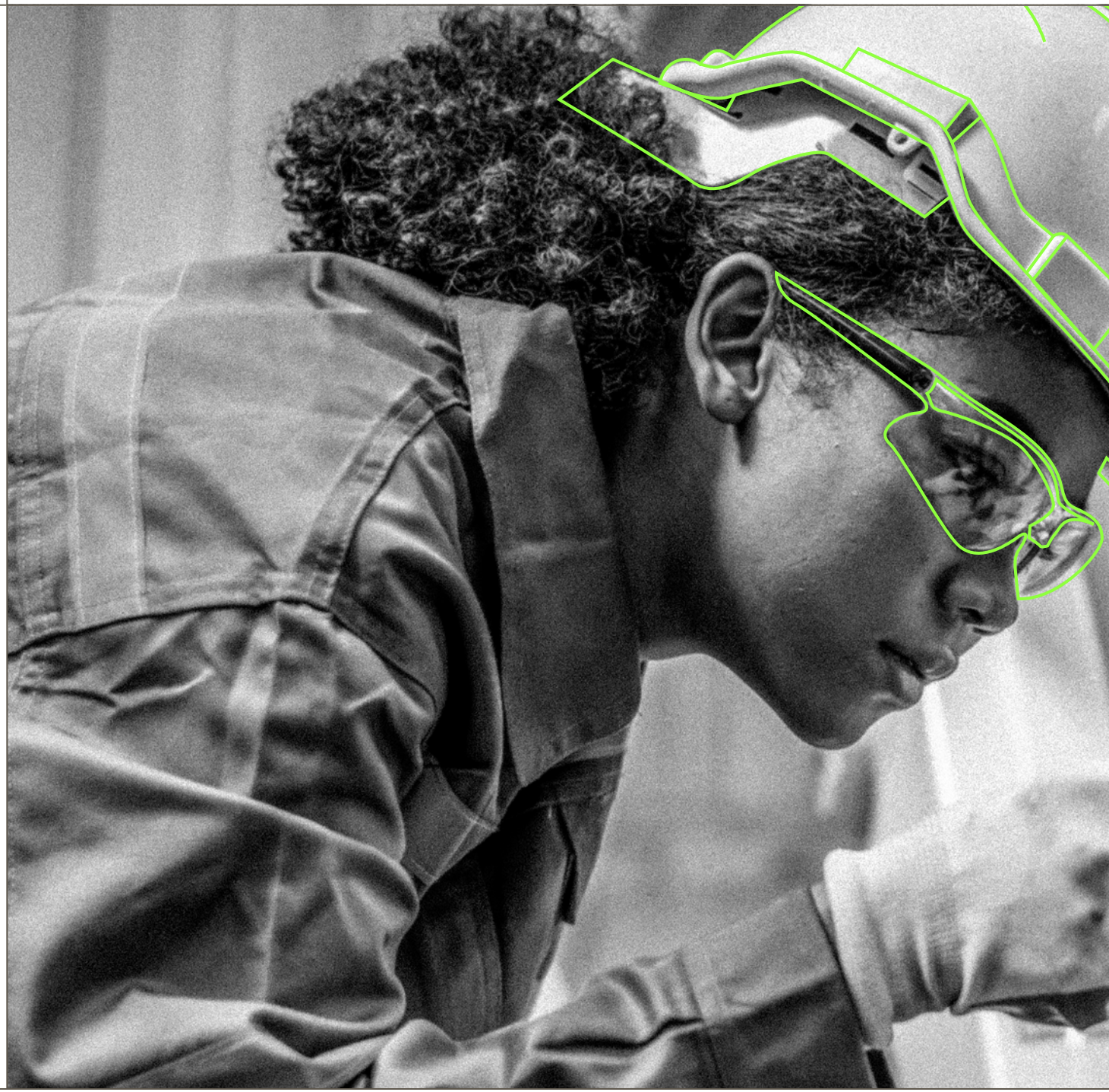
> "USE OF AI MODELS SHORTENS TIMELINES, REDUCES COSTS, AND IMPROVES ACCURACY...

Finally, in the healthcare application perhaps most closely related to EHS use cases, many caregivers are now using AI to predict the likelihood of patient falls, so they can try to prevent them before they happen. Eunice Yang, PhD has an interesting recent piece explaining how AI analyzes resident health records, movement data, and medication profiles to proactively flag residents with higher fall risk. Armed with this data, staff can then tailor interventions such as exercise programs, assistive devices, and environmental adjustments. In fact, National Health Service England (NHS England) is now implementing an AI model with an estimated 97% fall prediction accuracy and estimates that **the AI model will help avoid 2,000 falls and related hospital admissions daily across its home-care services**.

The point of these examples is that **AI usage to protect health and prevent injuries isn't theoretical, or some far-off future state. It is very much a part of present practice, and its success in these areas is leading to increasing adoption and investment, including in EHS**.

AI USE CASES IN EHS

With that context in mind, let's now turn to some specific use cases, also very much available for use today, in EHS management. Here are some of the most impactful ways that EHS software with AI/ML capabilities can help you proactively identify and address risks and prevent injuries.



Identification of Risks with Potential to Cause Serious Injuries and Fatalities (PSIF)

The BLS numbers don't lie, and they point to a worrying perseverance in both raw numbers and rates of serious injuries resulting in restricted duty, days away from work or even fatalities.

The key to preventing SIFs is to be able to identify major risks **before** they can result in major injuries. One of your most important information sources for that is your dataset of workplace incidents, including not only occupational injuries and illnesses but also near misses/close calls, in which an accident could have injured someone but didn't, at least this time.

It's a staple of safety management that EHS professionals need to maintain written documentation of these incidents, including a narrative of what happened and how it happened, so they can have the information needed to prevent similar incidents. The importance of this information explains why some regulations (including OSHA's Recordkeeping Standard in the US) actually **require** employers to maintain these records.

Of course, having the records and being able to easily use the records are two different things. Chances are, there have been very many incidents at your workplaces, especially if you have large facilities and responsibility for multiple worksites, and assuming you're doing your job as an EHS professional, that means many incident records, too.

Think about the time it would take to read through all of those records, identify the information indicative of the highest risk levels, and put that information into a format that's accessible and usable. Now, think about the consequences of delays in doing so. Remember, numbers and rates of the most severe injuries remain high in large part because employers are missing some steps in their risk identification process. Also, near misses often fly under the radar, even if they had significant injury potential, partially because no one was hurt, but also because it is very time consuming to investigate each of them for its risks. With significant risks, you can't afford delays in identifying and controlling them, because the safety and even the lives of your workers literally depend on your ability to control risks as effectively and quickly as possible. Speed matters.

Incident management capabilities with AI driven PSIF detection can make all the difference. Look for software that uses ML/AI to assess your incident records to identify PSIF risks, even when hidden in apparently less "serious" incidents and near misses, so you can prioritize your efforts on controlling those risks. The accuracy of the algorithm reduces potential for human error, and the speed of the process deliver the insights into your most significant risks you need to make the biggest improvements in workplace safety.

This level of support was not feasible at scale before AI, which helps users move from compliance-driven operations to continuous safety improvement, driven by data and supported by intelligence.

Incident Management Support

Your ability to use your incident records to identify risks depends on having good incident data in the first place. For example, many employers skimp on incident descriptions, and even worse, don't make enough effort to identify **root causes**, which are the underlying **systemic** reasons for an incident, i.e., one of the most important elements of an incident investigation.

Another problem is that root cause data is usually not very useful to companies because of quality issues. The reason for low quality is that companies often define a large number of root cause categories, and their workers then need to select from those lists of 100+ categories (on average), which results in less than optimal selections.

Incident management software with AI/ML capabilities can help. You have the option of activating ML/AI at several points, such as the description stage, where it will assess the overall quality of the description and make recommendations. From there, the AI can help identify hazard types involved in the incident from the description, even if the hazard types aren't currently in the "library" of hazards used by the employer. Finally, the ML/AI can recommend root causes and associated corrective actions based on the other information in the incident record. The ML/AI provides a narrower and more relevant shortlist of causes, which is easier and more convenient for review, and facilitates higher quality selections.

Overall, AI/ML reduces the friction and guesswork in incident investigations, resulting in more accurate reports completed more quickly, and enabling you to more effectively use the reports to improve workplace safety.

Job Safety Analysis (JSA) Improvement

JSA is a type of risk assessment widely used by EHS professionals and recommended by safety and health agencies such as OSHA. Unlike incident investigations, which take place after employees have done the work and after an accident happened, you complete JSAs before anyone conducts the associated work.

When you conduct a JSA, you break a job down into constituent tasks to make it easier to identify and assess risks, since there are fewer places for risks to "hide." JSAs also provide a great opportunity for engaging plant floor employees in the risk assessment process, which builds better buy-in to your safety programs and results in more accurate risk information.

Despite the advantages of JSAs, EHS professionals don't always capitalize on them, because of variability in the JSA process itself, and failure to provide a high enough level of detail in the assessment. Additionally, not everyone is knowledgeable about every job type, machinery type and procedure, and therefore people completing the JSA may miss hazards and the controls needed to reduce risk.

Look for JSA software that comes with AI/ML capabilities to improve your JSA output. Engaging an ML-powered description analyzer will give your descriptions a "strength" rating and, when applicable, provide recommendations for improvement – for example, if the description mentions a ladder, the AI will prompt you to include the ladder height. The AI can also help with hazard evaluation based on the description and provide a ranked list of applicable controls along with a justification for the control. You can even get recommendations for controls that aren't currently in your controls library, which will help you improve your operational risk maturity and more effectively reduce potential for significant injuries.

Chemical Ingredient Indexing

Chemical management is often among the top challenges EHS managers struggle with, because workplace exposure to hazardous chemicals brings high risks of injuries or long-term illnesses, including respiratory damage, if safe handling and storage practices aren't observed. For example, many chemicals have established occupational exposure limits (OELs) such as an OSHA permissible exposure limit (PEL), which is the maximum exposure, measured as an 8-hour time weighted average (TWA), that an employee can be exposed to within a work shift. In the days before OELs existed, and even now when employers don't sufficiently measure indoor air exposures, employees worked in environments with dangerously high concentrations of air contaminants that resulted in serious short-term and chronic health issues or even death.

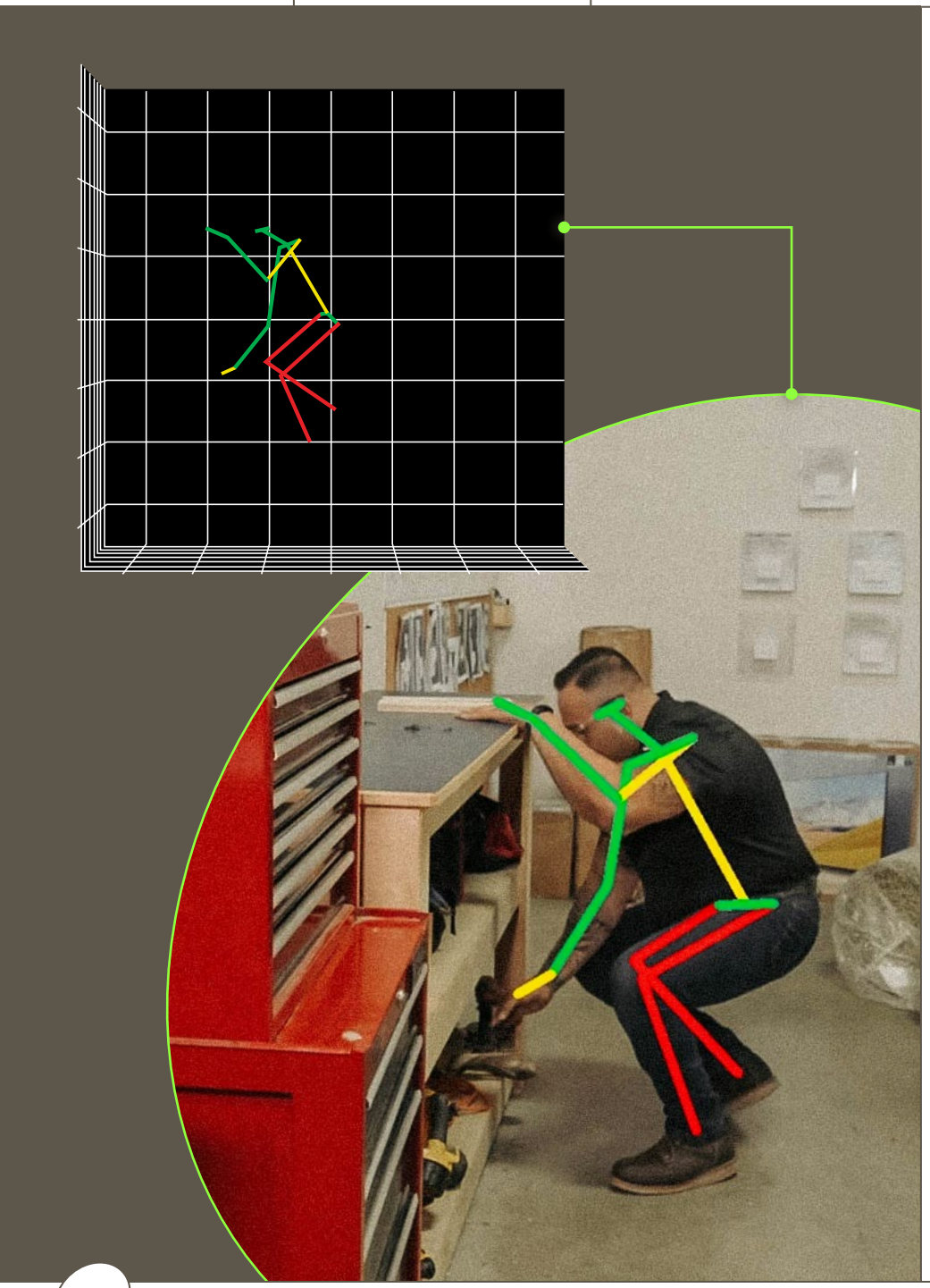
Specific chemical hazard information such as the OEL are functions of individual ingredients, which means that **you need to understand your inventory at the ingredient level to manage safety effectively**. Unfortunately, that's not an easy task without the right support. Many chemicals have product names that tell you nothing about what's in them, which means you have to conduct chemical ingredient indexing – a process of extracting the ingredients from the safety data sheets (SDSs) for the chemicals, and organizing it so it's easily accessible. Ideally, this process occurs in conjunction with **regulatory cross referencing**, or checking each ingredient against major regulatory lists, including not only OSHA's list of PELs but also other major OELs, as well as lists like EPA's Hazardous Air Pollutants (HAPs) and Toxic Release Inventory (TRI) chemicals, and identification of specific chemical groups of concern such as poly and perfluoroalkyl substances (PFAS), aka "forever chemicals." Many EHS professionals do their best to complete these tasks, but their method involves manually scanning and notating digital copies of SDSs, or in the author's own case, sitting down with a stack of physical SDSs and a florescent highlighter. It's a process that leads to ink-stained fingers and plenty of human error.

You'll have an easier time getting the information you need to keep your people safe with chemical management software that includes ML-driven chemical ingredient indexing. An ML model will pull ingredient data from your SDSs, which the software then presents in a Levels of Concern (LoC) summary of the most important regulatory and hazard information. The best software even includes a PFAS indicator feature so you can identify the forever chemicals hiding in your inventory, which will help you keep your employees safe, comply with the growing number of PFAS regulations, and satisfy stakeholder expectations for accountability towards PFAS.

Contractor Safety & Permit to Work

Many worksites have highly hazardous job tasks, such as work at heights, hot work (e.g., welding, brazing, and torch cutting), and work in hazardous atmosphere confined spaces. It's challenging to ensure awareness and visibility of all of these projects, including documentation that proper reviews and approvals have occurred before the work is conducted. Adding to the management difficulties, contractors perform many hazardous job tasks, which creates a need to ensure that each contractor has the appropriate training and documentation before arriving on site.

Software can be a big help here, by not only providing more efficient onboarding/induction of contractors and providing an electronic permit to work management system and real-time visibility of all projects at the site, but also by helping to process contractor OSHA logs and certificates of insurance up to 7 times faster through AI/ML. You'll be able to cut administrative work by 90% and more proactively manage safety for your payroll employees as well as contractors, vendors and visitors.

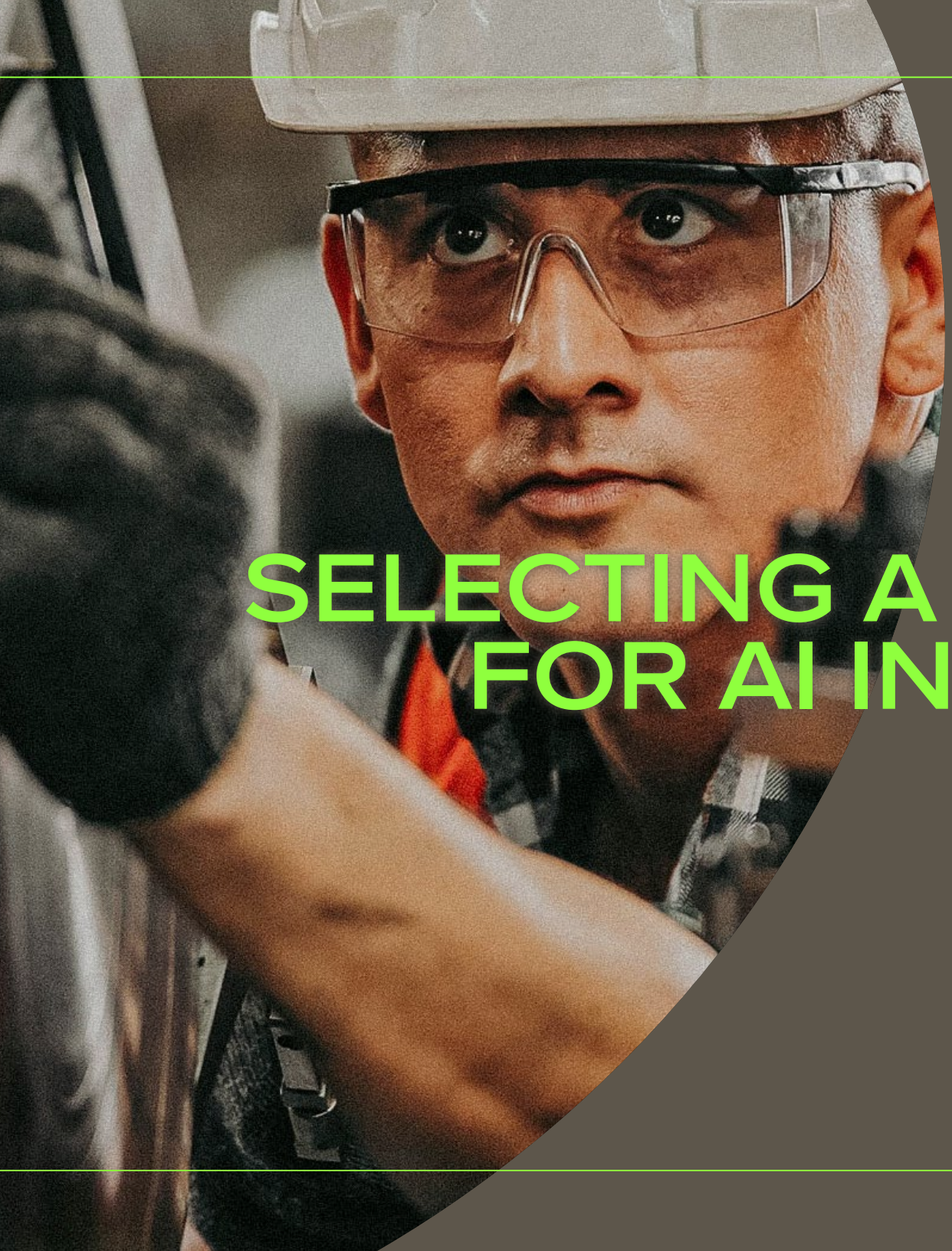


Industrial Ergonomics

Many EHS professionals don't fully realize the contribution of numbers of musculoskeletal disorders (MSDs) to numbers of severe injuries. An MSD is an injury to the muscles, nerves, tendons, joints, cartilage, or spinal discs, often caused or worsened by repetitive motion, forceful exertions, awkward postures, or prolonged physical activity.

Occupational MSDs are very common and often result in days away from work or restricted duty work – in fact, BLS data shows that MSDs accounted for 32% of all days away from work cases in a recent year. There is data available showing that nearly **one-third** of serious workplace injuries involve musculoskeletal disorders (sprains, strains, back injuries, etc.) In other words, ergonomic-related injuries are **the single largest category** of workplace injuries. This underscores how common strains and sprains are on the job. EHS professionals need to make sure they're prioritizing ergonomics and taking advantage of the ways that AI can help.

Look for industrial ergonomics software with 3-dimensional (3-D) motion capture capabilities that enable you and your team to rapidly identify MSD risks from anywhere, even using a mobile device. Embedded expertise in the AI model then provides accurate insights into root causes and even recommends suitable controls to reduce MSD risks.



SELECTING A VENDOR FOR AI IN EHS

To have the best chance of success in harnessing the benefits of AI software for EHS management, you need to select the right vendor.

In what follows, you'll find the key considerations we think you should keep top of mind when selecting an EHS software vendor with AI/ML capabilities. For the sake of transparency, this discussion will mention attributes found in VelocityEHS software and will feature many quotations from our VP of Research and Machine Learning, Dr. Julia Penfield. There are good reasons for this – after all, it's because we believe that these criteria are important, and have come to this conclusion through our conversations with EHS software users and the AI expert community that we've used them to design our software, and Dr. Penfield is one of the industry's most recognized experts.

We hope you'll find these criteria useful, and that they'll inform you and save you from potential missteps on your AI journey.

LOOK FOR PURPOSE BUILT AI SOFTWARE, AND AVOID "AI SLOP"

Not all vendors are equal, in part because not all AI is equal. It can be easy to forget the latter point, because there's a lot of discussion today about AI that makes it seem as if it's all just one thing, and some vendors definitely capitalize on that misconception. **They're able to get away with not doing enough, because people don't expect enough.**

For example, there are EHS software providers who tout having ML for incident management or operational risk, but their AI turns out to be a ChatGPT integration. ChatGPT is one of the most commonly used AI models on the market, and can be very useful for many applications, but it can't compare to the accuracy and context-specificity of output that purpose built AI-powered EHS software can provide.

"AI slop" is a phrase that's entered the lexicon in recent years and is the perfect representation of public skepticism about AI's ability to provide reliable, high-quality information. It's a descendent of another phrase often associated with information technology, namely "garbage in, garbage out" – the idea that the output of an analytical process is always going to be only as good as the input. In the case of modern AI software, a lot of that input has to do with the design and training of the ML algorithm. Purpose-built software is going to be tailored to provide the level of actionable intelligence you need to more effectively manage safety, while software than just embeds general AI models is less likely to get things right. That's why at Velocity, Dr. Penfield and her team focus on customized models rather than generic solutions, ensuring that their systems reflect the realities of EHS operations. Before deploying anything at scale, they conduct feasibility studies and structured pilots to validate utility and safety.

Dr. Penfield and her team also use only the highest quality sources for their own continuing knowledge base about AI, which enables them to develop and maintain a high-quality, purpose-built platform. "Importantly, we make a deliberate effort to stay away from pop-AI sources, such as podcasts or over-hyped platforms," Dr. Penfield said. "Instead, we emphasize rigor and depth, staying grounded in professional and research-oriented spaces that align with our mission."

The quality and innovation of Velocity's AI development have been widely recognized, with 12 patent awards by the U.S. Patent and Trademark Office for its use of AI/ML to help prevent workplace injuries and accidents. Additionally, Velocity has published five scientific papers, including two recent ones in the journal *Nature*, both of which list Dr. Penfield as an author.

"We've developed a portfolio of highly customized AI solutions that consistently outperform generic GenAI models in our domain," Dr. Penfield said. "That includes language models tuned for safety narratives, vision systems that detect environmental hazards, and hybrid models that merge structured and unstructured inputs. Our philosophy centers around driving value to customers, building trust, and ensuring transparency. We evaluate every model or tool we build, not just for accuracy, but for whether it helps customers make better safety decisions and enhances their experience."

As an EHS professional, you need to get safety right, and **you need accurate data, including assessment data, to do that. That means you need an EHS vendor with purpose-built software, because there's just too much risk to settle for anything less**.

SELECT AN AI VENDOR WITH HUMAN SUBJECT MATTER EXPERTS

Think of this as an addendum to the previous point. You need purpose-built AI in your EHS software, and you need that AI to contain the embedded expertise of human subject matter experts (SMEs). Some EHS software providers may tout the AI available in their capabilities, such as ergonomics assessments, but when you look "under the hood," the AI model is just crowdsourcing information from disparate corners of the internet, with no obvious vetting or validation of sources for accuracy or relevance.

A key predictor of how well any AI model fulfills its intended functions is how well it's been trained, and who trained it. Another predictor is how much evaluation and testing it's received **before** hitting the market. That's why, as one example, Velocity has a team of board-certified professional ergonomists (CPEs) involved in the development, testing and updating of the ergonomics assessment capabilities, ensuring that there are decades of human expertise informing the AI's output, including root cause identification and control recommendations. In fact, Velocity has attracted many lifelong learners, including many — like Dr. Penfield — who have transitioned from other industries or academia in order to thrive in a space that is technically rich and socially meaningful. In fact, Dr. Penfield has over two years of experience working in electrical generation power plants, which gives her a solid industrial background that informs her work.

"We're very motivated by the challenge of doing applied AI in one of the most human-centered and safety-critical domains," Dr. Penfield explained. "This

"A KEY PREDICTOR OF HOW WELL ANY AI MODEL FULFILLS ITS INTENDED FUNCTIONS IS HOW WELL IT'S BEEN TRAINED, AND WHO TRAINED IT.

tight integration between domain expertise and technical rigor is something we're extremely proud of — and it's what makes our solutions reliable in high-stakes environments."

With the human expertise embedded in Velocity's AI models, companies have a "virtual army" of experts available to support their EHS staff. The ML/AI helps them identify and assess risks early, so they can reduce numbers of workplace incidents and build a proactive safety culture.

LOOK FOR A VENDOR WITH A TRUE SOFTWARE PLATFORM

One of the biggest reasons to consider AI is to improve your EHS management efficiency, because doing so helps you keep more people safe more of the time. **Just make sure you're not trading in your old inefficiencies for new ones** by getting software that functions like disconnected solutions rather than a true platform.

One of the major issues that kills efficiency, and by extension hurts the effectiveness of your EHS management system, is having disparate methods for managing different pillars of safety. Many OH&S professionals have many different, disconnected management tools within a single area, such as separate tools for conducting safety inspections and tracking corrective actions, or various risk assessment methodologies that don't intersect or communicate.

These inefficiencies don't just add time and tedium to your life as an OH&S professional – they also increase risks to your workers by preventing you from addressing risks quickly enough. Of course, efficiency is even more important when you have a small staff, because you have to do more with less.

Make sure you're getting a **true** software platform, with a single sign-on to access the different software capabilities, and an integrated user experience. For example, the **VelocityEHS Accelerate Platform®** brings together Velocity's award-winning Safety, Ergonomics, Chemical Management, and Operational Risk capabilities into one seamless solution, with consolidated data access and reporting capabilities.

FIND A VENDOR COMMITTED TO CONTINUOUS IMPROVEMENT

Think about how quickly technology is changing, and the great strides AI has made in its accuracy, number of use cases, and adoption rate in just the past five years. When selecting EHS software solutions with AI models, make sure you're selecting a partner committed to continuous improvement, so that you don't find yourself trapped in the technology of today (or yesterday), and potentially start losing the advantages that ML originally delivered.

Continuous improvement is a core value at VelocityEHS. Working at the intersection of AI and EHS, the company's technologists engage with professional AI communities and attend top-tier conferences. They also frequently contribute to the world of academia and, on occasion, get to see their work emblazoned with a trademark symbol.

"Because we're **the** pioneer company in applying AI to the EHS space, our team members often have the opportunity to publish in prominent peer-reviewed journals — a rarity for professionals outside academia," Dr. Penfield said.

Velocity even harnesses the efficiency of AI to develop its own AI models. For example, we use internal AI tools to streamline data preprocessing, model validation, document classification and safety taxonomy curation, significantly reducing the cycle time for developing and testing new AI features across its product lines. "By deploying these intelligent accelerators, we multiply the impact of our research and deliver innovation faster and more reliably," Dr. Penfield said. "AI is not just the output — it is increasingly the infrastructure that supports our product development machine.
"We are building AI to help us build better AI."

Of course, one of the central reasons that continuous improvement is important is that it's necessary to ensure that the software accomplishes its central purpose of helping EHS professionals to ensure that, as much as possible, employees go home safe and healthy every day. Dr. Penfield said that her team often revisits the impact of their work in meetings: focusing on reducing fatalities, amputations, temporary and permanent disabilities, and even the less severe but still deeply disruptive injuries.

"There's a real sense of purpose — this isn't just model accuracy," Dr. Penfield said. "It's not about building AI solutions purely for the sake of innovation. Our team is deeply mission-driven, and the mission is about saving lives and enabling safer work. We're here because we believe in preventing serious injuries, fatalities and long-term harm."

Many EHS professionals may rightly worry about potentially confidential incident data being used to drive further refinement of AI models, which is why you should also make sure that the vendor you're considering has AI ethics policies in place. "We take data ethics very seriously at Velocity" Dr. Penfield said. "We have carefully developed internal processes and tooling — in collaboration with our compliance officers — to ensure that customer data is never used for model development unless they explicitly volunteer to participate in that process. This builds trust and sets a high bar for responsible AI."

Continuous improvement is a core tenet of EHS management, embedded in the guidance of management standards like ISO 45001. Expect, and demand, the same focus on continuous improvement from your EHS software provider.

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WE ARE BUILDING AI TO HELP US BUILD BETTER AI.

Dr. Julia Penfield

LET VELOCITYEHS HELP

THE VELOCITYEHS ACCELERATE® PLATFORM

In this eBook, you've hopefully learned that AI in EHS is not just a pipe dream and isn't even the "future" in a vague sense – it's the present. AI is already in wide use in many industries, including healthcare and medicine, to drive better health and safety outcomes, and it's already in use in EHS to help EHS professionals shift from a reactive to a proactive approach and reduce rates of injuries. It's relevant to you as an EHS professional, and in fact, **you can't afford to ignore AI, because it can directly support your life's mission to keep your workplace safe**.

What now?

If you're interested in learning more about the ways AI can improve your safety management, you should know that the right support is available now, with our purpose-built **VelocityEHS Accelerate® Platform**.

You'll get four of our world-leading software solutions in one integrated user experience, with single sign-on and consolidated reporting. And you'll get out purpose-built AI to help you conduct better ergonomics assessments that yield better insights, conduct chemical ingredient indexing of your hazardous chemicals, automatically process your contractor's logs and certificates of insurance, and improve your JSAs and incident investigations. In fact, our PSIF feature uses ML to identify major risks lurking in your incident records, so you can address them before a serious accident occurs.

SAFETY

ERGONOMICS

CHEMICAL MANAGEMENT

OPERATIONAL RISK

PLATFORM LEVEL FEATURES

+ **Centralized platform:** Access all your software solutions in one place, with one set of credentials.

+ **Built-in guides and training:** Reduce friction and time to value with in-app instruction for users.

+ **Configurable fields and workflows:** Tailor VelocityEHS Accelerate® to your needs without restrictive customizations.

+ **Auto-workflows and notifications:** Ensure timely follow-through with automated processes & alerts.

+ **User and role assignment:** Set up your people for admin functions and assign roles in one place, at one time.

+ **Data accessibility:** Effortlessly port information into your third-party systems of record, including integration with chemical inventory management systems.

+ **Mixed authentication:** The platform allows different authentication methods for different populations of employees, such as SSSO for payroll employees and username/password for contracted workers, which is very useful if you use many contracted or temporary workers.

+ **Single location tree:** Set multi-dimensional location tree up once & deploy across solutions.

+ **Action management:** Track and manage all of the follow-up/corrective actions generated by different management tasks across the four solutions, in one place, with easy ability to prioritize and assign actions and automate messages when actions are nearly due or past due.

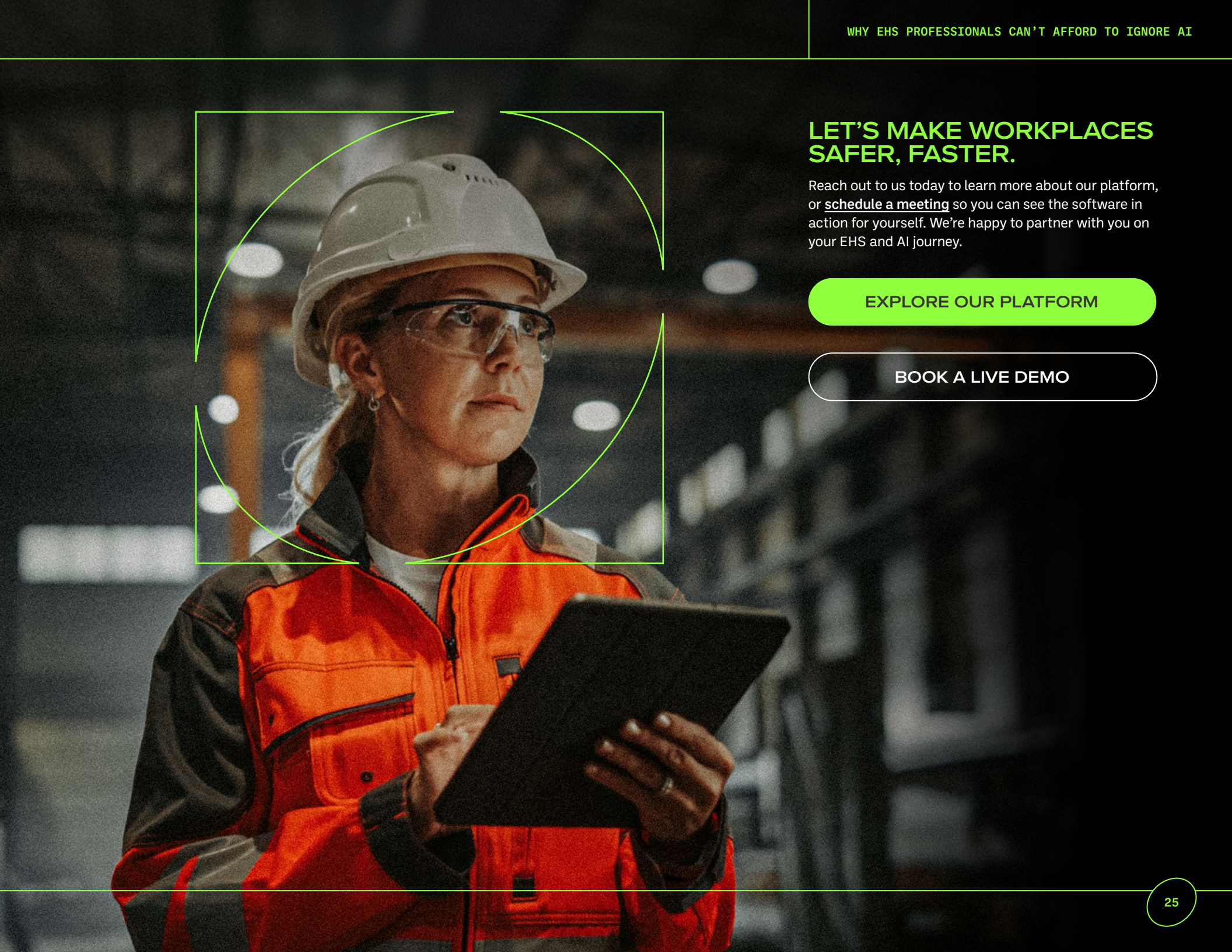
+ **Advanced Reporting:** Access and manipulate data your way, without the need to export, and customizable reporting to meet your needs.

+ **Machine learning and AI:** Transform what's possible with groundbreaking ML/ AI tools that simplify key management tasks, including ergonomics and chemical management.

+ **KPI Monitoring:** Track key OH&S metrics & set auto-alerts for non-conformity.

+ **Future-proofing:** Quickly adapt to your evolving needs with our microservice architecture, and immediate access to future platform updates.

+ **Security and privacy:** Gain confidence that your data is safe, because our platform comes with GDPR and SOC 2 compliance.



LET'S MAKE WORKPLACES SAFER, FASTER.

Reach out to us today to learn more about our platform, or **schedule a meeting** so you can see the software in action for yourself. We're happy to partner with you on your EHS and AI journey.

EXPLORE OUR PLATFORM

BOOK A LIVE DEMO

VelocityEHS®