



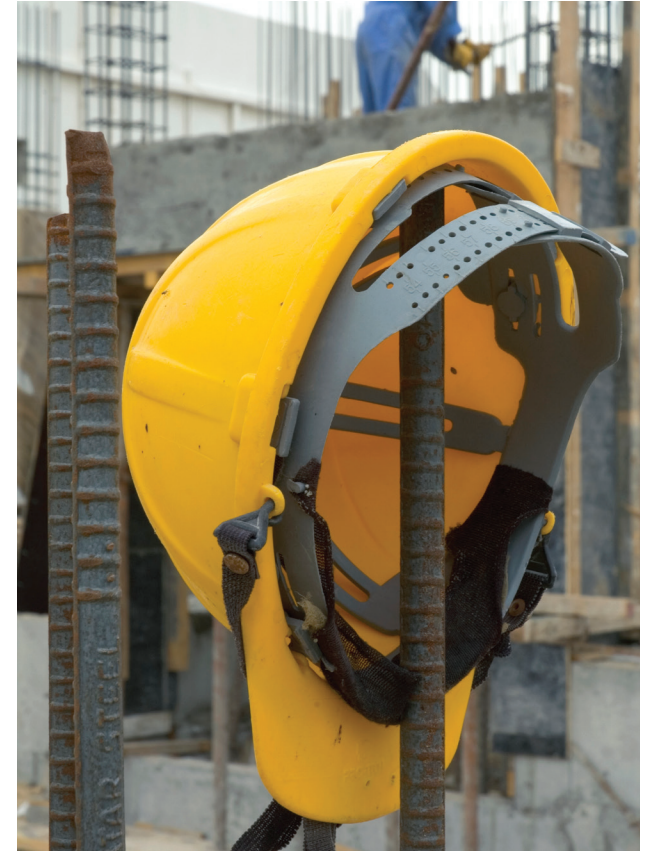
# Providing the best PPE *is no guarantee*

A guide to addressing the human  
factors in your PPE program

## PPE: No Guarantees

Look at any PPE advertisement—the advancements in PPE design and construction are nothing short of impressive—better protection, better standards, more comfortable fit, improved thermal properties and even better-looking styles, sizes and options.

But even if you have provided your employees with the best, most comfortable and stylish PPE, there is no guarantee it will be worn when it is needed—a common problem (see stats below) for safety professionals that results in too many unnecessary injuries—a problem so common that look and comfort tend to dominate ads by PPE manufacturers. Sure, “fit and finish” goes a long way in getting employees to put their PPE on in the first place, but what about day in and day out in all types of situations—in the heat of the moment, first thing Monday morning or end-of-shift Friday, when something changes, gets difficult or goes wrong? In these **critical moments**, you’ll need more than “comfort and cool” to get them to think “safety first”.



### 98 PERCENT OBSERVED NON-COMPLIANCE

98 percent of respondents who attended the American Society of Safety Professionals (ASSP) show answered "yes" when asked if they had observed workers not wearing safety equipment when they should have been, according to the survey, which was conducted by Kimberly-Clark Professional and announced in a 2011 press release.

To make matters worse, 30 percent of these respondents said this had happened on numerous occasions. Given this, it's not surprising that worker compliance with personal protective equipment (PPE) protocols was cited as the top workplace safety issue by all survey respondents.

<http://www.prnewswire.com/news-releases/us-workers-risking-injury-by-not-wearing-required-safety-equipment-100432059.html>

## Guaranteed Human Factors: States, Critical Errors and Critical Decisions

Even with an exceptional PPE program in place, unless you address human factors in your PPE training, errors and decisions will be made that will result in injuries—**that's a guarantee.\*** It's guaranteed because we all make mistakes. Even if your employees know the risk, know the rules and know the consequences, even though they want to go home safely as much as you want them to, even if they want to comply, the bottom line is: when they're rushing, frustrated, tired or complacent, they are more likely to make an unintentional error, make a poor decision, take a shortcut or simply forget their PPE.

**Figure #1**

### Factors that Influence PPE Compliance

#### Personal/Human Factors

- States (like Rushing, Frustration, Fatigue, Complacency)
- Mind not on Task
- Choices/Decisions
- Recollection (Memory)
- Calculations (Risk Assessment)
- Rationalizations (of Risk)
- Recognition (of change or warning signs)
- Anticipation (of errors or hazards)
- Habits/Routines
- Motivation
- Knowledge
- Skills
- Attitude & Respect
- Personal Safety Culture



#### Company Factors

- Rules, Procedures, Policies
- PPE Provided (quality, replacement frequency)
- Training Provided (on Hazards, PPE Use, and Human Factors)
- Leadership/Supervisor Support and Commitment
- Monitoring/Enforcement
- Company Culture

#### PPE Factors

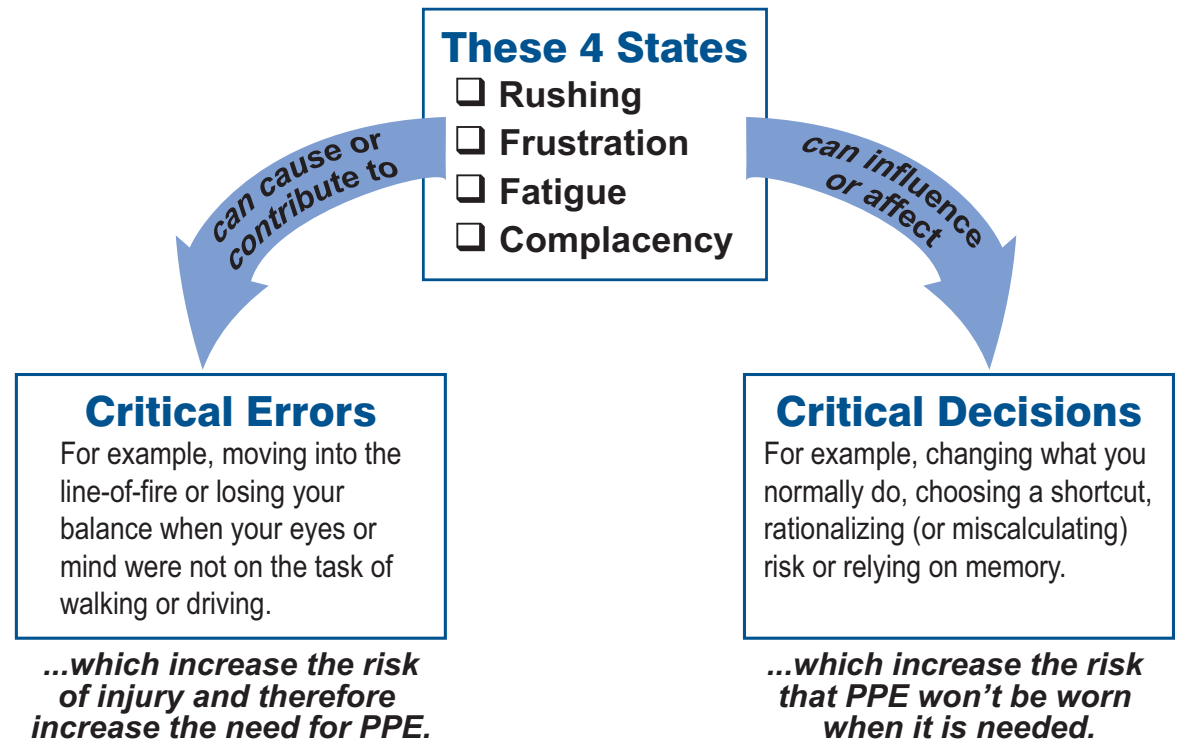
- Style (brand, colour, size, options)
- Comfort (fit, weight, thermal properties)
- Use (ergonomics, impairing vision or movement, correct type for job/hazard)
- Ease of Care (portability, storage, durability)
- Replacement Frequency

#### **\*Your own guarantee:**

Don't take our word for it—look for the human factors in your injuries and incident investigations. Have you ever said things like, “he just wasn't paying attention and made a mistake” or “we have all kinds of rules to prevent this sort of thing from happening”. Have you had a lot of slips, trips and falls, cuts, contusions and back injuries that would have been very difficult to prevent with guards, rules and procedures? Have you ever had to remind someone to put on their PPE? You already know human factors are an issue and you likely know that telling them to “do this” or “don't do that” doesn't work 100% of the time.

A person's state of mind greatly influences injuries and PPE compliance (see Figure #1 page three—Factors that Influence PPE Compliance). In fact, these four states—rushing, frustration, fatigue and complacency—are a **double-edged sword**. Not only can they cause you to make a critical error that increases the risk of an incident occurring in the first place, they can also influence your decision to wear the PPE that is needed to minimize the severity of the injury when the incident occurs (see Figure #2 – The 4 States that Affect PPE Compliance). Fortunately both problems can be addressed with **one solution**—personal safety skills training that focuses on human factors.

## Figure #2 The 4 States that Affect PPE Compliance



## 72% of Employees Take Safety Shortcuts

A recent survey of 1000 safety professionals determined that 72% of employees take safety shortcuts (not following procedures, not wearing PPE, etc.) and 17% of employees do so frequently.

\*Safety Daily Advisor. "Understanding How Human Factors Affect Safety Compliance." Survey. March 2014

## Solutions: Your Options

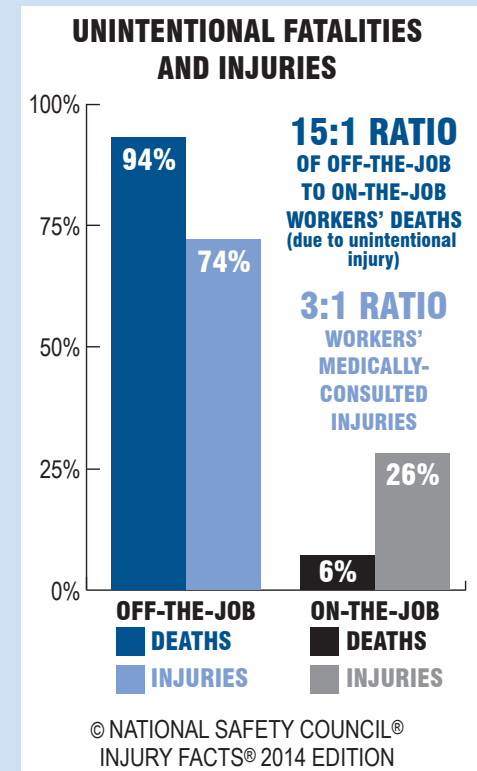
In many cases, the solution to achieving PPE compliance typically falls on the shoulders of the safety professional. It consists of hazard awareness training, sourcing the best PPE and providing PPE-specific training followed by leadership support and enforcement of rules and procedures. These are necessary components and effective to a point, but come up short of **full compliance** because:

- people can't be monitored 100% of the time (especially off the job)
- nobody is trying to get hurt—even when breaking a rule
- our actions are being influenced by our states



## Off-the-Job PPE Compliance

As you can see in the chart below, off-the-job injuries and fatalities far exceed those occurring in the workplace—thanks to the extensive efforts of safety professionals, engineering controls and traditional PPE programs. It also highlights the importance of getting people to wear PPE at home.



Getting people to wear their PPE at work is one thing, getting them to wear it at home or when nobody is looking is quite another. You will see later in this guide how adding human factors or personal safety skills training to the mix can help you achieve this difficult but vital task.



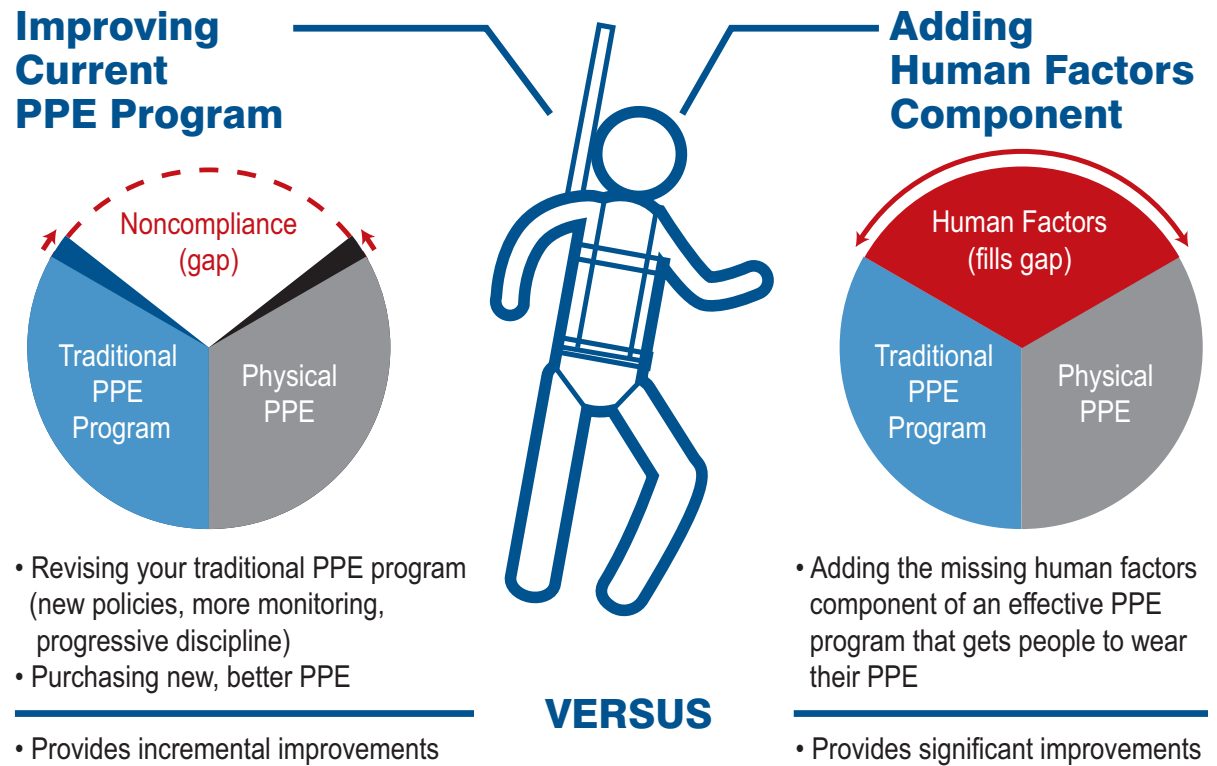
After a traditional PPE program is in place, if employees are failing to comply fully, you essentially have 3 options:

1. Revise your traditional PPE program (new policies, more monitoring, progressive discipline)
2. Purchase new, better PPE
3. Address the human factors that are affecting their PPE decisions

Since you have already established a traditional PPE program, the first 2 options above will statistically only give you small, incremental improvements in compliance.

If you haven't addressed human factors yet, then option 3 will obviously give you your biggest improvement opportunity by adding this necessary component (see Figure #3 –PPE Compliance Improvement Comparison). ***Though there are no guarantees you will ever achieve 100% PPE compliance, adding personal safety skills training to address the human factors will close the gap significantly.***

**Figure #3**  
**PPE Compliance Improvement Comparison**



## Solutions: Your Options with SafeStart

SafeStart isn't about rules and procedures nor does it offer any physical PPE, so it won't help you with your first two options for improving PPE compliance. But if you've already explored those options and are looking to address the human factors component, there is no other process in the world better suited to help you with this option than SafeStart (though we'll save the "sales pitch" for our website).

Though it takes some time and practice, you can teach people the skills needed to recognize and manage their states to reduce the risk of making a critical error and improve their critical decisions in real-time.

In SafeStart terms, these skills are called critical error reduction techniques or CERTs. There are four CERTs. The four CERTs, combined with the four states and four critical errors (see Figure #4 – The SafeStart Card), may seem too simple at first, but you can't just tell people to never be tired again, just like telling them they have to wear their PPE won't guarantee they will wear it all of the time. ***It takes a number of sequential learning steps to prepare people for personal safety improvement.***



**Figure #4**  
**The SafeStart Card**



### **These four states...**

- ☐ Rushing
- ☐ Frustration
- ☐ Fatigue
- ☐ Complacency

### **can cause or contribute to these critical errors...**

- ☐ Eyes not on Task
  - ☐ Mind not on Task
  - ☐ Line-of-Fire
  - ☐ Balance/Traction/Grip
- ...which increase the risk of injury.**

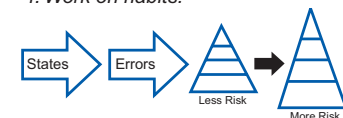
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### **Critical Error Reduction Techniques (CERT)**

1. Self-trigger on the state (or amount of hazardous energy) so you don't make a critical error.
2. Analyze close calls and small errors (to prevent agonizing over big ones).
3. Look at others for the patterns that increase the risk of injury.
4. Work on habits.



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You have to help people understand how their states affect their safety, give them motivation and skills to improve and eventually help them build their own personal safety culture where they choose to wear their PPE, remember it and get in the habit of wearing it everywhere—at work and at home. In doing this, they also achieve a *personal responsibility* for PPE compliance, that can be shared with you (see Figure 5 – The Shared Responsibility of PPE Compliance).



**Figure #5**

## The Shared Responsibility of PPE Compliance

Human Factors training helps people develop a personal responsibility for PPE and safety compliance to help balance those responsibilities of the safety professional and company.

### Company Responsibility

### Personal Responsibility

Provide Training

Actively Participate in Training

Provide PPE and set requirements

Wear PPE when required

Develop policies/procedures

Follow policies/procedures

Remind employees of PPE use

Build habits around PPE use

Monitor PPE Compliance

Self-monitor PPE Compliance

Develop company safety culture

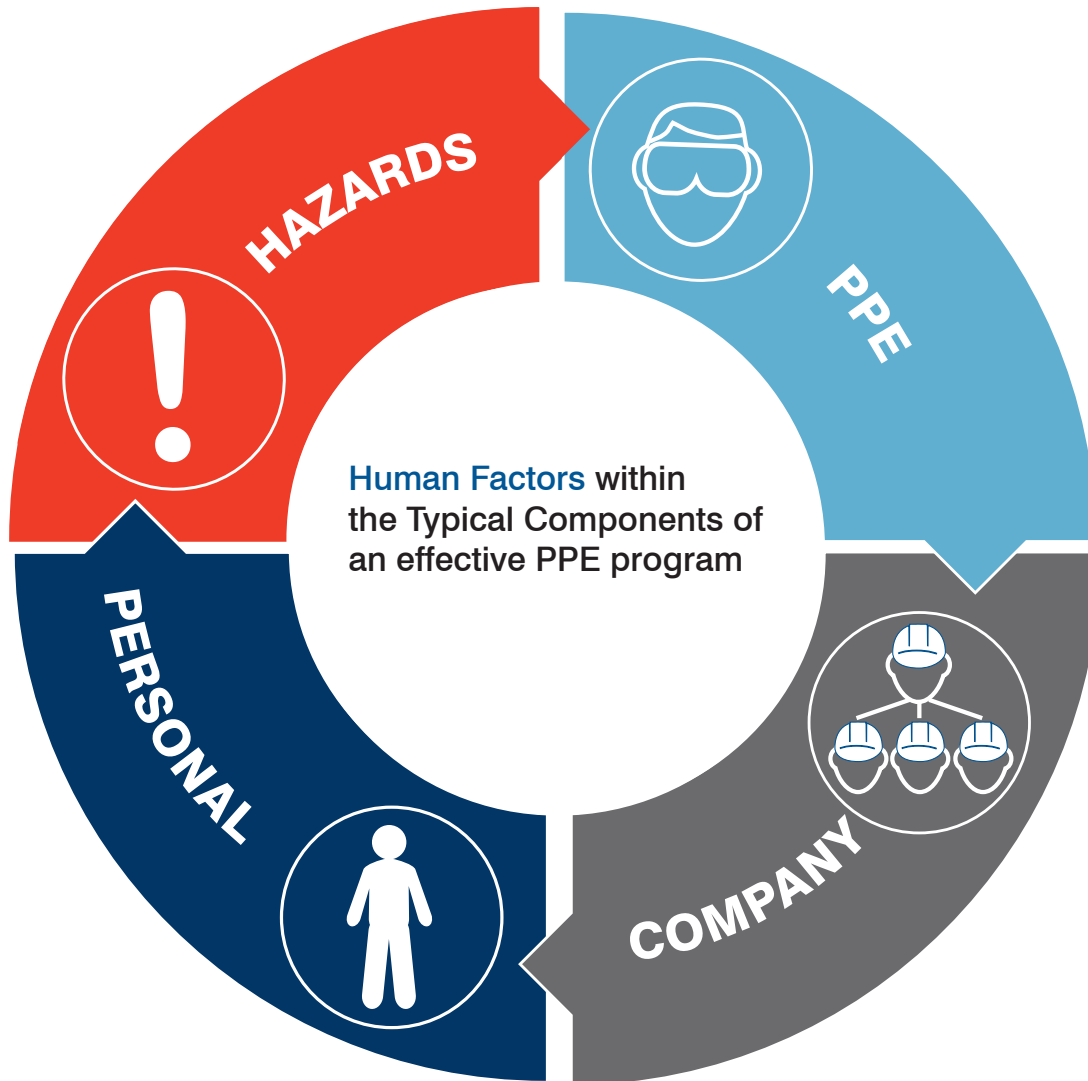
Develop personal safety culture

Improve safety at work and at home with human factor training

Improve safety at work and at home with human factor training



## Human Factors within the Typical Components of an effective PPE program



### Using this Guide

The purpose of the guide is not to question, change or replace any traditional PPE components, but rather highlight the need to address the human factors within it. Your PPE structure may differ from the simplified example that follows, but think about how human factors are affecting your injuries and compliance within your own process. Simply use this guide to help you understand where human factors fit into your overall PPE program and how much they can impact your results.

# PART 1

## Hazard Assessment and Identification

Look for all types of hazards—especially those that can change or cannot be eliminated (stairs, gravity, moving equipment, etc.) as they increase the need for PPE and the need for human factor training.

Consider how improper PPE can create a state like rushing, frustration or fatigue - Examples: Wrong glove (too thick or too thin or too slick) can cause excess grip requirement (Excess Fatigue), Slow operations/process time (rushing & frustration).

Consider how critical errors (Eyes/Mind/LOF/BTG) can make a hazard out of something you might not see as a hazard traditionally.

Consider how critical decisions (if people took a shortcut, forgot to follow procedure, etc.) could affect the hazards you have identified.

## Hazard Controls

Obviously eliminating or controlling hazards with engineering or job controls should be your first priority to eliminate or minimize exposure to the hazards.

For those hazards you identified above that can change or can't be eliminated, you'll need to address them with proper PPE selection and procedures (see Part 2).

Also think about how important human factors training will be in keeping people safe around these uncontrolled hazards—like keeping those hazards in mind and in sight and choosing to follow procedures every time.



HAZARDS



PPE

# PART 2

## PPE Training

Why you need to wear PPE:

- Hazards and risk potential
- Company reasons (OSHA regulations, financial performance, condition of employment, for the safety of your coworkers)
- Personal reasons (for your family, for your coworkers, doing the things you like to do, etc.)

*Understanding human factors (awareness of how our own actions contribute to our own injuries and how our states can lead to critical errors and decisions).*

What PPE you need to wear for your job:

- Consult OSHA regulations for your worksite-specific requirements.

When to wear PPE:

- In accordance to the policy, type of activity and location.
- *Once people have an understanding of how human factors can cause unintentional errors and can influence decisions in critical moments, then the importance of building good habits for wearing PPE consistently will become more apparent to them.*

How to wear PPE:

- Inspection.
- Putting on, adjusting fit and taking off.
- Storage and cleaning.

## PPE Selection

With input from employees and open communication for feedback, identify and select the correct type required for each job and the best brand, options, etc. for the employee.

## PPE Policies, Procedures and Responsibilities

Only you can determine the best policies and procedures for your workplace, but recognize how human factors can influence your employee's ability to follow them consistently.

PPE



## COMPANY



### Supervisory & Leadership Support

Understanding and support of the policy.

Understanding and support of human factors and developing a common language around them with the employees.

Setting an example.

Consistent reminders and discussion.

Providing time for putting on PPE.

Providing adequate/new PPE as needed.

### Assessment & Enforcement

Audits/walkthroughs.

Regular and consistent enforcement.

Developing an understanding of human factors will also provide a common language with employees regarding critical errors and critical decisions and provide a shared responsibility for compliance.

### Evaluation & Re-evaluation

Monitor with observations, investigations and near-miss reports.

Integrating Human Factors into observations, investigations and near-miss reports as an additional layer of understanding of root causes (but be sure to keep it non-punitive) can also provide a common language for understanding how injuries happen.

Re-evaluate annually or when a job changes, new equipment or hazardous materials are added.

# PART 4

## Specific Human Factors Training

You will want to and need to conduct specific human factor training separate from your PPE-specific training because it would be too complex to handle in tandem and provides benefits beyond the scope of your PPE program. The SafeStart program, specifically, will help employees:

- prevent incidents from occurring in the first place.
- keep those hazards that can't be eliminated in mind and in sight.
- make better decisions.
- recognize change and risk rationalization.
- develop personal safety systems.
- develop a personal safety culture, 24/7.

## Off-the-Job PPE Program

If possible, provide basic PPE for employees to take home.

Encourage them to follow similar procedures at home and to teach their family members what they have learned at work.

Human factors training will help significantly in this regard since the personal skills will travel with them wherever they are.

## Developing a PPE-focused Safety Culture

Will be the result of proper execution of all components.

Human Factors training will help significantly in this regard by transitioning from a company-driven safety agenda to a personal and shared responsibility for safety.

PERSONAL





## Summary:

To reiterate what was mentioned before, ***the purpose*** of this guide is not to change or replace any traditional PPE program components or question the importance of selecting the best, most comfortable PPE you can buy for your employees, but rather it ***is to highlight the critical need*** for you to address the human factors that influence PPE compliance and unintentional error.

Specifically:

- Even with the best PPE and the most well-informed and well-intentioned employees, PPE may not be used/worn if they are rushing, tired, frustrated or complacent.
- There are many factors that influence PPE compliance, but personal/human factors are the biggest contributor in critical moments.
- Human factors contribute to unintentional errors that increase the need for PPE and influence critical decisions that can lead to unintentional non-compliance (forgetting, rationalizing or miscalculating risk, etc.).
- You can give people an awareness of these human factors and teach people skills to combat the unintentional errors and improve their critical decisions.
- Your biggest opportunity for improving PPE compliance is the addition of human factors or personal safety skills training once a traditional PPE program is already in place.
- Human factors training also reduces the chance of an incident occurring in the first place, giving you an added layer of protection between the hazard and the employee
- If you don't address these human factors, employees will continue to make unintentional errors and errors in judgment that will keep you from achieving full compliance and keep you from achieving and sustaining zero injuries
- Getting people to comply and having a shared responsibility for safety will require a human factors training program that guides them through a series of self-awareness and skills to help them develop a personal safety culture that aligns with the corporate safety objectives
- There is no other process in the world better suited to help you address these human factors than SafeStart



## Improve PPE Compliance Now:

Reading this guide has hopefully highlighted both a problem you have and an opportunity for improvement. You need to learn more—now—before your next PPE purchase, before your next eye, hand or head injury.

Investigating human factors is free and investigating our solution to address human factors is also free. Your only investment at this stage is time, and if you look into SafeStart, we will ensure it is time well spent.

See the options below and take just one next step for improving your PPE compliance.



### Learn More

We hope that you found this guide helpful. For more insight into a variety of safety problems—and their potential solutions—check out our collection of on-demand webinars

[safestart.com/webinars](https://safestart.com/webinars)



### About SafeStart

For over 25 years, SafeStart has been serving clients with solutions to increase personal safety awareness and skills. During this time we have become leaders in human factors management. We've helped thousands of companies, large and small, reduce injuries, increase engagement and achieve sustainable culture improvement.

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