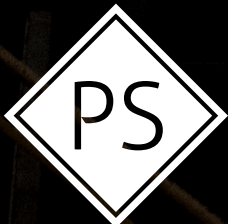




AlertMeter[®]



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What is AlertMeter®?

The AlertMeter® is a cognitive test taken on a touchscreen device that measures a person's alertness. It displays non-language graphic shapes that are slightly obscured to the viewer. The test taker is timed as they determine if all the shapes are the same or if one shape is different. AlertMeter® takes less than 120 seconds to complete. The scoring algorithm takes speed, accuracy and item difficulty into account and then compares the user's current score to their previously established baseline score.

Thus, each subject's alertness is measured against his or her personal baseline rather than in comparison to others. The test incorporates both minimal standards and a permitted baseline deviation.

If the baseline deviation is too high, then the user is prompted to take the test a second time, giving them the opportunity to better focus. If they continue to exhibit an elevated deviation on the re-test, their assigned supervisor or front line manager is automatically notified. Research on the patented system was funded partly through the National Institute for Occupational Safety and Health (NIOSH) and the National Institutes of Health (NIH).

Baselines

Each individual has a natural level of performance on the test. The system calculates a specific baseline for each individual after their first 10 scores. The baseline computation then "rolls forward" as it follows the individual's increasing skill, which generally levels out after a period of time. AlertMeter® compares the individual's current performance to their baseline. This ensures that each individual is tested in comparison to his/her own normal rather than in comparison to others.

Testing

At the start of each day, or at another assigned time, employees will log into the test and tap the touch screen to begin the test. The test can last up to 2 minutes, usually becoming shorter as the user becomes familiar with the process. Once the test is completed, the system will display the individual's percentage score against their baseline, giving them an awareness of their own cognitive alertness, and in the case of elevated deviation on a retest, prompt a conversation with their supervisor.



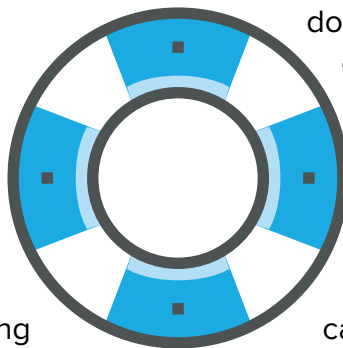
The Purpose Of AlertMeter®

The AlertMeter® is a top screen indicator that is used to identify employees who are struggling with alertness and focus, a state of mind which can jeopardize the safety of the employee and those around them.

It is sensitive to any number of issues that might cause a person's alertness to be diminished, greatly expanding on the concept of impairment from what is currently considered today.

For example, a person who shows up to work hungover from drinking the night before can be as much of a safety risk as someone who comes to work under the influence of alcohol. However, current alertness testing methods offer no way to determine illness as a cognitive impairment. Nor would anyone know if another person had been up all night with a sick child, and is coming to work in a state of serious fatigue. All of us experience life's consequences, and AlertMeter® creates a non-punitive environment for this awareness.

The test is designed to be an objective observation to enable further discussion between the supervisor and employee when appropriate. Predictive Safety offers a sample HR Toolkit and simple training materials to facilitate integrating the process into your company.



Does this replace drug testing?

No, but it can be used as a top screen indicator for the entire workforce every day, which far surpasses random drug testing as a means of identifying impairment in the workplace.

What does a low score mean?

The AlertMeter® is sensitive to any number of issues that might cause a person's alertness to be diminished. Examples include:

- Being exhausted from staying up all night with a sick child
- Coming down with the flu
- The use of a medication or substance that is impeding concentration or causing drowsiness
- A relationship crisis or the receipt of bad news

Because the detection is general, no immediate conclusions should be made on why the problem exists or how to proceed. A low score does not automatically imply that punitive action should be taken.

Knowing the general cause for non-alertness can help determine the next steps, if any. Consistent with general HR policy, the goal is a quick conversation to learn more about what can be done to keep the employee and the work environment safe. The time, expense and often tragedy that occur after an accident can be reduced with this pro-active practice.

The Science Behind AlertMeter®

The AlertMeter® was originally developed in response to maritime fatigue disasters such as the Exxon Valdez incident.

Based on science developed by NASA, it set the record for the fastest cognitive impairment test by reducing the length of the test from NASA's original 10-min PVT down to its current 60 seconds.

In its early days, the AlertMeter® was tested for over 70 million work hours in the South African mining industry.

In 2009, it received funding from NIOSH to publish a scientific study and help introduce the test to the US workplace safety market.

Key findings from Scientific Research Studies:

2009, "Measuring Human Fatigue with the BLT Testing System":

"The study showed that a shape recognition task has considerable sensitivity to fatigue and may be sufficient to screen for severely fatigued workers. Human fatigue is generally considered to be difficult to quantify and measure so, in theory, a test that is sensitive to fatigue will also be sensitive to other causes of impairment including drug and alcohol effects..."

2019, "Testing Alertness of Emergency Physicians: A novel quantitative measure of alertness and implications for workers and patient care":

"The alertness software technology appears to be a viable method for monitoring alertness among emergency physicians regardless of shift time or length. The ability to monitor, measure, and quantify individual alertness as exhibited in this study marks the potential for physicians to manage their own fatigue and alertness in real time. This could have positive implications on shift and task scheduling and potentially reduce errors in patient care by providing a prompt, objective measure of fatigue so that countermeasures can be taken."



An employee was afraid that taking the AlertMeter® test would cause him to lose his job because he had a learning disability and his primary language was not English.

Despite his fears, the employee was able to complete enough tests to successfully establish a baseline and continue using AlertMeter®.



Why Is The AlertMeter® Needed In The Workplace?

Companies have had very little opportunity to help keep their employees alert and focused beyond monitoring the use of drugs and alcohol in the workplace. This has resulted in an unwanted “us versus them” dynamic that focuses on catching people doing something wrong, and ignores other legitimate reasons as to why someone may be struggling with alertness.



AlertMeter allows companies to identify an employee who is having an “off day” from reasons including fatigue, illness, and emotional distraction. This helps them develop a culture of caring, not policing, and concentrates on keeping employees safe and keeping productivity up.

Fatigue

Fatigue is a very real issue in many workplaces, and is often cited as a cause for accidents anywhere accidents are being measured. The clearest indication of fatigue in accidents comes from the transportation industry, which collects the most data on the subject. The National Highway Traffic Safety Administration estimates that drowsy driving was responsible for 72,000 crashes, 44,000 injuries, and 800 deaths in 2013. However, these numbers are underestimated and up to 6,000 fatal crashes each year may be caused by drowsy drivers.

Many businesses have never measured fatigue because they have no way to measure it. Some people believe that fatigue can be controlled by the power of their will. However, this is not the case. Study after study has shown that people can stay alert through fatigue, but will invariably experience a loss of peripheral vision, concentration, short-term memory, as well as reduced decision-making skills, the ability to cope with stress, and many more negative consequences.

A person who has missed a night of sleep has roughly the same impairment issues as a person who is drunk. Being awake for 23 straight hours results in a comparative Blood Alcohol Content level of .05%. AlertMeter can help people become aware of the seriousness of their fatigue, and help supervisors and employees make decisions to keep the environment safe.

The AlertMeter is a process that identifies any decrease in cognitive alertness from a person’s normal baseline. There may be times when further action is needed to determine the cause of the decrement, but often, awareness of the situation and a quick discussion about reducing risk are sufficient.

How The System Operates In Your Workplace

General Overview

The AlertMeter is a top screen indicator that is used to identify employee non-alertness in the moment. The data can also be used in correlation with accident data, issues of quality control and low productivity, and shift scheduling decisions.

Employee Experience

At the start of each shift, an employee will go to a touchscreen tablet or use their own mobile device to log in to the AlertMeter test. The test takes less than 2 minutes to complete, and the percentage of their score results, against their own personal baseline, will be displayed to the employee upon completion.

If the deviation from their normal baseline is too high, the system will prompt them to retake the test. The first score is not reported to the supervisor, but is recorded on the system.

If they are within the deviation tolerance on the second test, they are good to go. Either way, they are given a “heads up” as to their own alertness level.

If they are prompted to retest and fail the second test, the system automatically sends notification to the supervisor that has been assigned to that employee for the test.

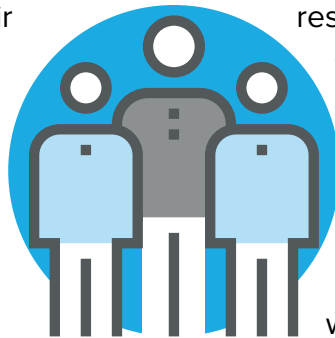
Supervisor Experience


If an employee fails their second test, the system automatically notifies the supervisor, who will make a decision on how to proceed. AlertMeter provides a sample HR Toolkit, with simple suggestions for front line supervisors.

In addition, AlertMeter has an administrative panel that is exclusive to your company, and permitted supervisors can log in and view the status for the entire workforce they are responsible for in real time. A report is available for downloading that can be de-identified and used with other data the company collects to discover important correlations.

The AlertMeter is a tool for helping Supervisors identify those employees who may be struggling with alertness in that moment. This may include making it easier for Supervisors to make decisions with reasonable cause for drug or alcohol testing, or simply provide more information to decide which employees should be operating high risk equipment.

Based on the HR policies of your company, a Supervisor will not be required to delve into the personal nature of an employee’s life, but can concentrate on the issue at hand, which is keeping everyone safe.





When an employee scored abnormally on the AlertMeter® test, the supervisor observed that the employee was disoriented and unable to focus. Conversation revealed the employee had been over worked with exposure to extreme heat and had not been sufficiently hydrating.

The employee was told to take a break, drink some water, and cool off for recuperation. After a period, he took another AlertMeter test, and scored back within his normal range. He was allowed to return to work.

What's Included:

Employee set up

We'll provide you with logins and passwords for the agreed-upon number of employees who will be participating in the pilot. The app is available through app stores at no charge, and once employees have it on their cell phones, they can log in with the information you pass along to them, which identifies them as your employees. Or, you can set up the test on a fixed tablet placed on the wall near employee entry, or have them login online from a laptop or desktop computer.

Admin Back Panel

We will then set up a confidential portal online for your selected administrators to use. On this site you can set up Supervisor notifications, Supervisor Groups, and allow Supervisors to view individual results and history, as well as download reports on groups in CSV format.

HR Toolkit

We will provide you with our sample HR Toolkit and training materials; these have been developed to help you integrate the program into your company with the most success, and we welcome your feedback to help us make these materials more useful to you.

The HR Toolkit includes HR guidelines for using the AlertMeter, training materials to introduce the AlertMeter to both supervisors and employees, and sample language to insert into existing company policy.

AlertMeter Deliverables

- Software and interfaces
- AlertMeter Alertness Test to use for impairment testing for all selected employees
- Administrative interface screen via web portal
 - Tracking Employee Alertness Values
 - Reporting
- Education and training for employees, managers, and system facilitators
- Remote access and monitoring
- Online help desk support
- HR Toolkit

Company Deliverables

- Dedicated department or section manager to coordinate and lead project
 - Must be at sufficient management level with authority to execute the project
- Interface and coordination regarding employee implementation
- Access to facilities and training areas to conduct training classes, if desired

Hardware required

- Touchscreen tablets affixed to wall near clock-in devices for browser version
- Laptop or desktop computers
- Employee mobile devices for mobile version

Commonly Asked Questions

About Using AlertMeter®

Q. Where do the employees take the test?

A. Most organizations affix the touchscreen tablets to the wall near clock-in devices or common entries. Another option is using the mobile version of the test on smartphones. Either test can be taken at any time throughout the day, or multiple times.

Q. What do employees think of the test?

A. Surveys overwhelmingly show that employees appreciate the non-invasiveness of alertness tests, and employers feel that alertness tests create a safer work environment.

Q. How does management know when someone deviates significantly from their baseline?

A. The system provides a dashboard that is accessible through login credentials. The system also sets up text messages or other notifications for supervisors when a deviation is flagged.

Q. Can you game the system?

A. Obviously you can't design anything perfectly, but we have built gaming detection into the software. If it detects gaming, the system aborts for a set period of time. It's important to note that as users become more adept at taking the test, their baselines automatically roll forward into more recent scores to reflect their improvement with the test, and the system is designed to notice if someone is intentionally trying to manipulate their baseline.

Q. Is it difficult to learn?

A. Not at all; the test is actually enjoyable to take, and most people like to see their daily score as an insight into their current mental acuity.



An employee scored abnormally on two consecutive tests, triggering a notification to a supervisor.

In the conversation that followed, the supervisor learned that the employee's father had passed away the day before.



Interview

Why Triple-S Steel Uses Alert Meter



An Interview with Tanner Hickman
Director of Safety and Security
at Triple - S Steel Holdings

Q. How many facilities and employees at Triple-S are using the AlertMeter?

A. We have 900 people at 40 locations in the U.S. using the AlertMeter.

Q. What has changed at Triple-S since you implemented the AlertMeter?

A. At the facilities where AlertMeter has been used, our incident rate is now very close to zero.

Q. What other improvements have you seen?

A. The interaction between our leadership team and our employees from a safety perspective has just gone through the roof. It has increased everyone's safety awareness. Second, in states where marijuana has been legalized, the morale has really improved because there's more assurance that everyone is fit for work. Also, we have lowered our Worker's Comp claims activity. The costs have definitely come down. And paying for AlertMeter is about the equivalent of one Worker's Comp claim.

Q. How did your employees feel about using the AlertMeter?

A. I can count on one hand the number of employees who objected, and once they started to use it on a day to day basis, it turned out to be nothing at all.

Q. What's been the investment of cost and time?

A. Extra hardware was about \$15,000 total for all 40 sites. The investment of time is about 2 hours per site on infrastructure. The physical training is about 2 hours for the supervisors, and about 45 minutes for the employees.

Q. What about increased liability? Do you have any concerns about that?

A. Our Labor, HR, and Insurance attorneys told us the AlertMeter actually de-escalates our liability with another layer of ensuring our folks are fit for duty.

Interview

Why Triple-S Steel Uses Alert Meter

Q. Has it changed employees' lifestyles overall?

A. Employees have told me that they're taking better care of themselves now such as getting more sleep. One employee said his family traditionally had a BBQ every Sunday night with a fair amount of partying. They've changed it to Saturday night so he's better rested for work.

Q. Any other stories you've heard?

A. The one story that really sticks with me is an employee who came in one morning, struggling with the AlertMeter game, so the supervisor asked him if anything was wrong. Apparently the evening before, his teenage son had to be taken to the emergency room because his son has some sort of terminal illness. The guy was in the hospital all night with his kid, and he shows up for work the next day. The supervisor asked him, "Why in the world are you here?" The guy's response was, "I'm the breadwinner of the family, I've got to earn a paycheck." This particular employee operates a 50-ton crane. Especially in the steel business, we've got a lot of tough guys out there. Prior to using the Alertmeter, we probably would have never known his state of mind that day. When you think that through, I can't tell you for sure we avoided an accident that day, but I can tell you we kept an employee who had no business working that day from hurting himself or others.

Q. What was your reason for looking for something like the AlertMeter?

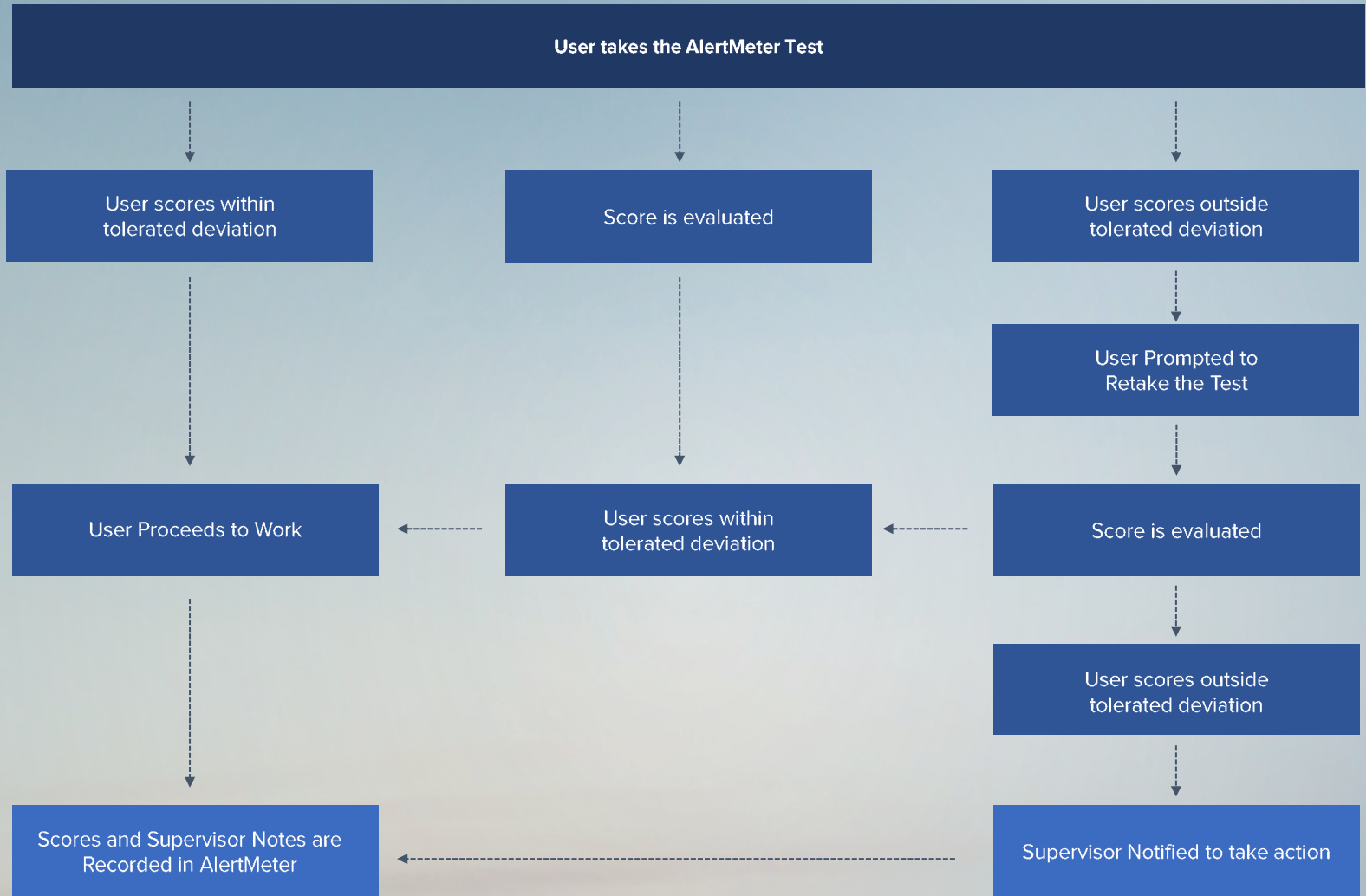
A. We started off looking for a solution to marijuana detection but it has morphed into a whole lot more than that. The vast majority of causes for employees scoring outside their normal ranges has been fatigue or emotional distress. At the end of the day it doesn't really matter what the reason is – we are a safer company regardless. Everyone is better able to focus.

Q. Thanks for talking with us about this, Tanner.

A. There are no secrets to safety. I'm happy to discuss our experience with anyone who is interested.

The AlertMeter is a 60-second game-like test that helps companies gain visibility into employees struggling with alertness with an instant, objective, individualized result.

Standard Workflow





AlertMeter®



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