

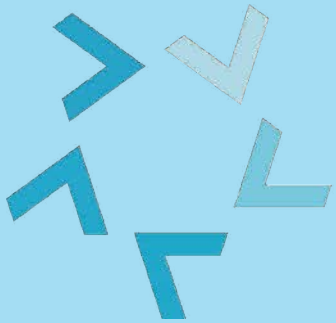
DORN

Innovative Healthcare Solutions

Fit-for-Work Program



Powered by Predictive Safety



AlertMeter

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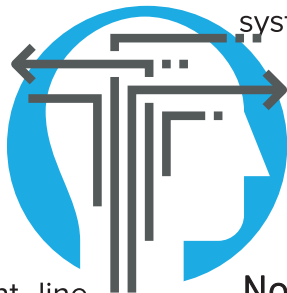
What is AlertMeter®

AlertMeter® is a cognitive test taken on a touchscreen device that measures a person's alertness. It displays non-language graphic shapes that are optimized for either tablet or smartphone devices. Users are timed as they determine if all the shapes are the same or if one shape is different.

The average user spends less than 90 seconds to complete the test. 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.

This means 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 the 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 norm 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 touchscreen to begin the test. The test can last up to 90 seconds, 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.

Notifications

Supervisors are notified when an employee 1) fails to take the test during the allotted or expected time, or 2) deviates from the tolerated percentage of baseline.

The Purpose of AlertMeter®

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 both the employees' safety and that of those around them.

It is sensitive to a 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 Guide* and simple training materials to facilitate integrating the process into your company.

Does this replace drug testing?

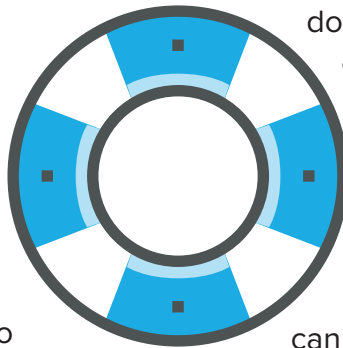
No, but it can be used as a top screen indicator for the entire workforce every day, which far surpasses random drug testing as a means of identifying impairment in the workplace.

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 proactive practice.

Why Is 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 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 as 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 alertness test 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 AlertMeter® Operates In Your Workplace

General Overview

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, employees will go to a touchscreen tablet or use their own smartphones to log in to the AlertMeter test. The test takes less than 90 seconds 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.

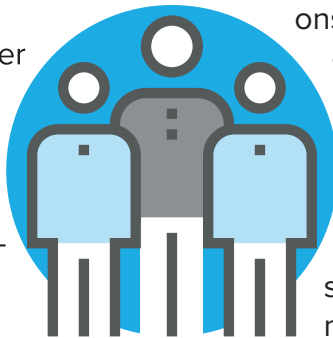
Supervisor Experience

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 Guide* 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 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 and can concentrate directly on the issues of improving safety, reducing risk, and maximizing performance.



AlertMeter's®

Fit-For-Work Program

Employee Setup

You will assign logins and passwords for your participating employees. The app is available free at app stores, and upon installing it, employees can log in with their respective IDs and passwords. Alternatively, you can set up the test on a tablet placed on the wall or table near where employees enter, or they can access the test using a laptop or desktop computer.

Admin Dashboard

We will 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 Guide & Instructions

We will provide you with our *HR Guide* and training materials which have been developed to help you integrate the program successfully into your company. The *HR Guide* includes HR guidelines for using the AlertMeter, training materials to introduce the AlertMeter to both supervisors and employees, and suggestions for setting up devices to use. We also welcome your feedback to help us improve these materials.

AlertMeter Deliverables

- Software and interfaces
- AlertMeter Alertness Test to use for impairment testing for all selected employees
- Administrative Dashboard via web portal
 - Tracking employee alertness scores
 - Reporting
- Education and training for employees, managers, and system facilitators
- Remote access and monitoring
- Online help desk support
- *HR Guide*

Hardware Required

- Browser Version:
 - Touchscreen tablets, or
 - Laptop or desktop computers
- Smartphone Version:
 - Apple or Android smartphone

Commonly Asked Questions About Using AlertMeter®

Q. Where do the employees take the test?

A. The test is usually taken where employees begin their shifts. Many organizations affix touchscreen tablets to the wall near clock-in devices or common entries, or have them on the table so employees can use them, take the test, and set them down for the next user. Another option is using the smartphone app version of the test, or to use a laptop or desktop computer. The 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?

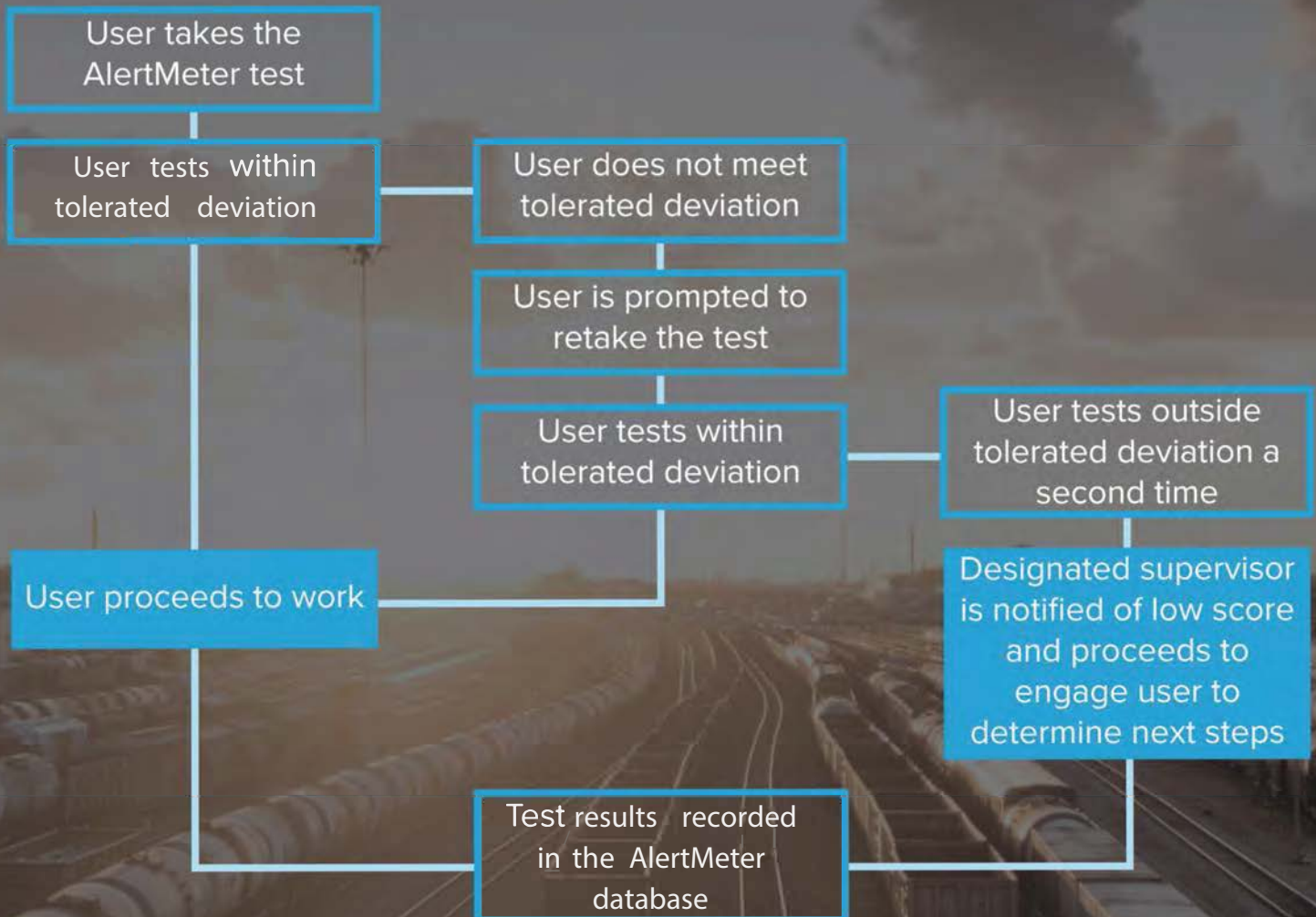
A. Not at all; the test is actually enjoyable to take, and most people like to see their daily score as an insight into their current mental acuity.





AlertMeter[®]

Standard Workflow



Science and Background Of AlertMeter®

AlertMeter is a patented impairment detection system that was designed from a technology developed by Bowles-Langley Technology in San Francisco, California called the BLT Alertness Test.

Funded in part by NOISH, the BLT Test has been used in Predictive Safety's Fatigue Management System PRISM since 2011, and was the origin of the AlertMeter, a stand-alone impairment test with over 15 patents and patents pending worldwide.

Excerpts from “Research Report: Measuring Human Fatigue with the BLT Testing System,” September 24, 2009

A copy of the entire report is available upon request.

The BLT Alertness test was shown to be a usable and understandable short test with good operator acceptance. The protocols for Aims 1, 2 and 3 included testing 155 individuals from a variety of educational backgrounds, ages and ethnicities. All subjects were able to understand the test and respond properly using the left and right arrow keys on a computer keyboard. Very few subjects indicated that the test was too fast, too difficult or too long. This finding confirmed the premise that the BLT Alertness Test is acceptable for the general working population.

Outcomes and Impacts

Current procedures in hazardous and dangerous operations do not truly protect the lives of the thousands of individuals who put their trust in the hands of operators on the assumption that they are alert. Trials such as this one show that practical methods that do a better job of screening are available.

Mandatory drug and alcohol testing may reduce drug use but this activity needs to be re-examined in view of its actual impact on accidents caused by impairment. A new policy offering companies the option of fitness for work screening in conjunction with drug testing and/or as a substitute for drug testing should be explored.

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, but further testing with alcohol in particular will need to be done to confirm this hypothesis.

Science and Background Of AlertMeter®

Excerpts from "Testing Alertness of Emergency Medicine Residents in an Academic Hospital Setting"

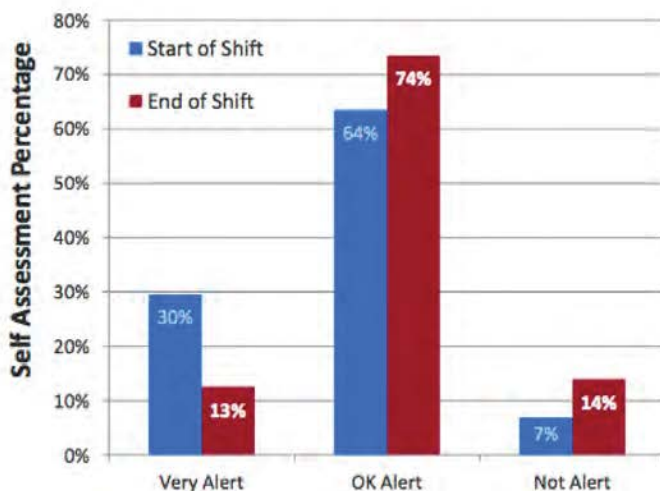
Publication forthcoming

A study was conducted at the University of

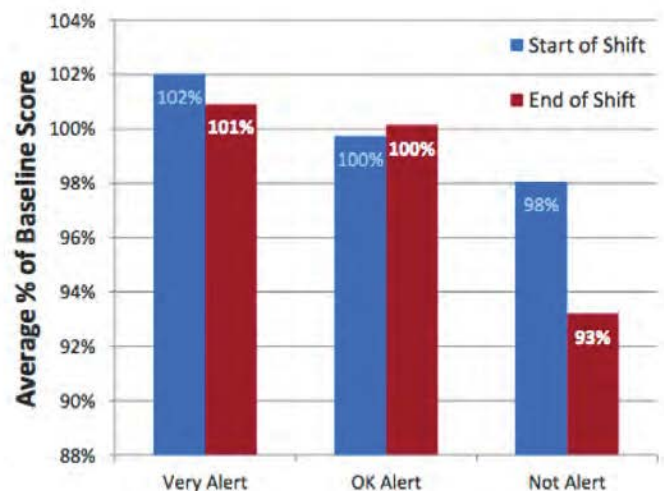
Louisville Hospital in 2015 to evaluate AlertMeter's viability to reduce risk in an academic hospital emergency department environment among emergency medicine residents working 10-h shifts. The study aimed to determine whether AlertMeter test results correlated with subjects' own self-reported fatigue levels, and how the residents' alertness levels correlated with typical circadian biorhythms, and how their alertness levels were affected by the length of the shift.

Given the AlertMeter test results' ability to correlate with expected fluctuations in circadian rhythms among the emergency medicine residents in the study as well as the benefits of fatigue management in reducing safety risk in general, the AlertMeter appears to be a viable method for monitoring alertness among emergency medicine residents regardless of shift time or length.

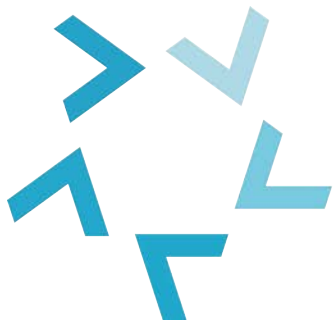
Having a credible measure of alertness for individual residents can positively influence shift- and task-scheduling to reduce risk of error and allow individuals to take countermeasures as appropriate—such as rest, food, and moderate doses of caffeine like a cup of coffee—and improve their alertness levels.



Only about 300 data points indicated a "Self-assessment". But the data does correspond to expected results



People scores only slightly higher when feeling 'Very Alert' vs. 'OK Alert'. But people score significantly lower when reporting feeling 'Not Alert' at the end of shift



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