Impairment Science, Inc. (ISI)

WHITE PAPER

How Management Can Deploy the
***Druid* "Fit-for-Duty" App**

To make the best use of the *Druid® Fit-for-Duty* App in the workplace, it's important to understand what Druid is and what it is not.

- Druid is an accurate, objective, and rapid general test for cognitive and physical impairment. It is *not* a drug or alcohol test.
- Druid tests for impairment whatever the cause might be, but identifying the cause of that impairment requires additional investigation.

Druid Avoids Drug Testing's Severe Limitations

Impairment due to drugs and alcohol is a big problem. The US Department of Labor found that employees' impairing use of drugs and alcohol contributed to 65% of on-the-job accidents. According to the Small Business Association, each substance-abusing employee costs the employer an average of $7,000 per year

Tests for drugs and alcohol, however, are of limited value because, while they test for the presence and amount of a chemical substance in a person's body, _they do not measure actual on-the-job impairment_. This is an important distinction. The psychoactive component of cannabis, THC, can be detected three weeks or more after consumption, but it produces impairment for only the first hour or two. For this reason, testing for the presence of THC, by itself, is of little or no help in determining impairment and therefore is essentially useless in promoting workplace safety and productivity. This is the case for many psychoactive drugs.[1]

The Druid Fit-for-Duty Test, on the other hand, uses neuroscience-based assessment methods to determine a worker's level of cognitive and physical impairment. Specifically, Druid calculates an impairment score based on a balance test and three game-like, divided-attention tasks that assess reaction time, decision-making, hand-eye coordination, and time estimation. In general, an elevated Druid impairment score means that a worker is at greater risk.

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[1] Blood alcohol tests can determine how much alcohol is in a person's bloodstream, and in some situations, the measured BAC (blood alcohol concentration) can serve as a proxy measure of impairment. For example, a driver who has a BAC of 0.08% or higher is defined by law to be impaired in 49 states (Utah's *per se* limit is 0.05%). When it comes to worker safety, however, the situation is more complicated since relatively inexperienced drinkers will feel cognitive and physical effects at relatively low BACs, while problem drinkers who have built up a tolerance to alcohol's effects may not show evidence of impairment at higher BACs.

Druid Assesses Impairment Due to Any Cause.

Obviously, drug and alcohol tests only test for drugs or alcohol, but there are many other causes of impairment that are of concern:

- Fatigue
- Illness
- Injury (including concussion)
- Chronic conditions
- Prescribed medications
- Severe stress (including traumatic emotional shock)

Druid detects cognitive and physical impairment *whatever the cause* - or combination of causes - might be. Druid can establish whether and to what degree a worker is impaired but not the cause. As such, Druid serves as a *screening device.* The app alerts management that a worker has an elevated score, after which additional steps can be taken to determine whether that individual is currently fit for duty.

Druid serves the same purpose that a fever thermometer does in medical practice. Normal body temperatures range from 97.8 to 99.5 degrees Fahrenheit. An abnormal temperature above this threshold is an indication of possible illness but does not identify the cause. The fever thermometer is a screening device that allows healthcare providers to consider a range of appropriate responses, including doing nothing, being vigilant, seeking medical attention, or even immediate hospitalization. The appropriate course of action depends on the fever's severity, the patient's other symptoms and medical history, and the results of additional tests.

Druid works similarly. The app's impairment scores range from 25 to 75 points. After a worker has established a baseline score, subsequent scores above 44 indicate likely impairment, and the higher the score, the greater the impairment. The app categorizes scores below 44 or below from "good" to "excellent" and scores above 44 from "fair" to "very poor." Scores well above the 44-point threshold indicate that a worker may not be fit for duty. Once identified, the worker's condition is now open to further investigation. Managers have a wide variety of options to react to an elevated Druid score.

Responding to Elevated Druid Scores

Druid assesses a worker's scores in two ways, using both an *Objective Standard* and the worker's *Personal Standard*.
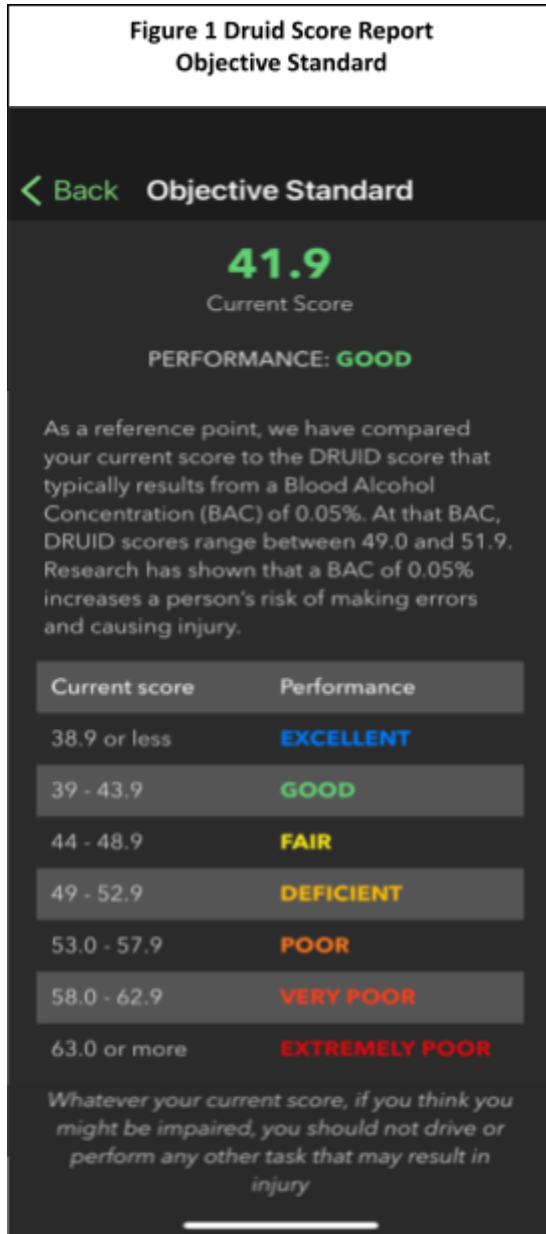
One way, the <u>*Objective Standard*</u> assesses safety risk by comparing Druid scores to the corresponding level of impairment associated with different blood alcohol concentrations (BAC).

Scientific studies have demonstrated that a Druid score of 55 represents a level of impairment approximately equivalent to the impairment associated with BAC of 0.08%. As noted, this is the legal limit that defines impaired driving in most of the U.S. A BAC of 0.05% - which is approximately equivalent to a Druid score of 50 - is the legal driving limit in much of the rest of the world.

Higher or lower Druid scores represent higher or lower BAC-equivalent impairment. Workers with a Druid score of 55 would be as unlikely to be fit to work on elevated scaffolding as they would be if they had a BAC of 0.08%. Of course, few jobs pose this level of safety risk. Thus, employees with a Druid score of 55 who work a desk job, where balance and hand-eye coordination are not required, are unlikely to pose a safety risk to

themselves or others. On the other hand, desk workers might have an elevated Druid score due to cognitive rather than physical impairment, in which case the quality of their work and their productivity is likely to suffer.

Figure 1 is a screenshot from the app showing how Druid's *Objective Standard* would report an impairment score of 41.9

Figure 1 Druid Score Report Objective Standard

‹ Back   **Objective Standard**

41.9
Current Score

PERFORMANCE: **GOOD**

As a reference point, we have compared your current score to the DRUID score that typically results from a Blood Alcohol Concentration (BAC) of 0.05%. At that BAC, DRUID scores range between 49.0 and 51.9. Research has shown that a BAC of 0.05% increases a person's risk of making errors and causing injury.

Current score	Performance
38.9 or less	EXCELLENT
39 - 43.9	GOOD
44 - 48.9	FAIR
49 - 52.9	DEFICIENT
53.0 - 57.9	POOR
58.0 - 62.9	VERY POOR
63.0 or more	EXTREMELY POOR

Whatever your current score, if you think you might be impaired, you should not drive or perform any other task that may result in injury

The other way of assessing Druid scores is with the <u>*Personal Standard*</u>. This measure assesses safety risk by comparing a worker's impairment score against their personal baseline score. *Generally, this is the best method for identifying workers who may be cognitively or physically impaired.*

Druid determines each user's personal baseline score in a rolling calculation of the user's scores when they are, by their report, unimpaired. The vast majority of baseline scores will range between 38 and 46 points, but baseline scores outside this range often occur depending on people's cognitive and physical abilities. A baseline score of 50, for example, might be the result of a person's innately poor balance, an injury, a medical condition, or advanced age.

Over time, the baseline score will become increasingly stable (i.e., less variable). For most individuals, their baseline score will be well-established after only 2 or 3 practice tests, while a small minority of individuals may need to use the app 4 to 7 times to reach that point.

Once a baseline score is well-established, a worker who is unimpaired will have Druid scores that normally vary within only a point or two of the baseline score. Elevated scores beyond that narrow range likely indicate some level of impairment.

Note that a person's baseline score might increase or decrease over time. Any individual, by working diligently to improve, may show a marginally decreasing baseline score in the same way that a competitive swimmer, with dedicated practice, may better their performance by a few tenths or hundredths of a second. Likewise, the Druid baseline score might increase over time as a person ages.

Sometimes changes in the baseline score can be more dramatic. For example, a worker healing from a knee injury and steadily regaining strength and balance is likely to show a significantly improved (decreasing) Druid baseline score over time. In contrast, an individual with a chronic medical condition or a long-term alcohol or drug problem is likely to show a significantly higher baseline score over time as their cognitive and physical abilities decline.

Given the general stability of Druid baseline scores, comparing a current Druid score against the baseline score makes it possible to detect changes in a worker's cognitive or physical state. With a baseline score of 40, for example, a new score of 50 or even 45 should be looked into since it is

above what is normal for that person, that is, their *Personal Standard*. Similarly, for a worker with an elevated baseline score of 50, an even higher current score may indicate additional impairment on top of their pre-existing level of impairment.

Figure 2 is a screenshot from the app showing how the *Personal Standard* would report an impairment score of 41.9 for a worker with a baseline score of 42.3

Figure 2. Druid Score Report Personal Standard
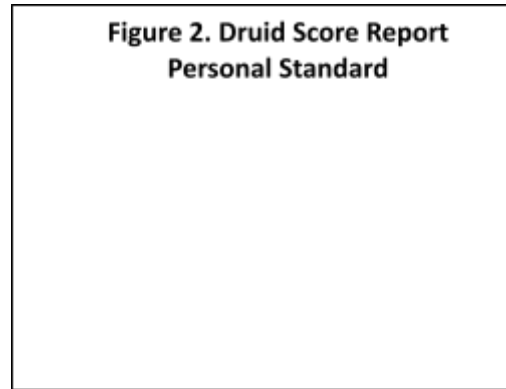
Responding to Elevated Druid Scores

Again, Druid can identify a worker who may be impaired but not the underlying cause. Accordingly, employers are advised to take only minor disciplinary action, if any, and *never* to take any significant disciplinary action, such as terminating the employment of a worker, on the basis of a Druid test *alone*. By analogy, a competent physician might advise a patient to get extra rest but would never prescribe medication based on a thermometer reading alone. Instead, the physician would take action (including non-action) based on the totality of the patient's circumstances. Employers should do the same: take action or not based on the totality of the worker's circumstances, including any non-Druid indications of impairment

Impairment screening gives management the ability to identify workers whose elevated score puts their fitness for duty into question, but a decision about what action steps are appropriate should be made only after the reason for the score has been investigated.

Protocols for Using Druid

This section explores how employers can use Druid to promote worker safety and productivity. Like drug and alcohol testing, impairment testing can be implemented in a wide variety of ways.

The Onboarding Process

All workers subject to impairment testing participate in Druid's onboarding process. First, they register and download the app. Next, they practice the test three times in order to become familiar with the app and establish their Druid baseline score. All scores appear in real time on Druid Enterprise, ISI's cloud-based portal that serves as management's score dashboard, database, and analytical engine.

Management should assess each worker's fitness for duty by interpreting their Druid scores, in conjunction with all other relevant circumstances, using the guidelines that appear in Table 1.

Table 1
Impairment Assessment Guide
Applying the *Personal Standard*: Comparing a Current Score to the Baseline Score

DIFFERENCE	INTERPRETATION
More than 2 pts below	Better than personal normal
2 pts below - 2 pts above	Personal normal
2.1 - 4 pts above	Slightly above personal normal - take notice
4.1 - 7 pts above	Above personal normal - requires scrutiny
7.1 - 10 pts above	Likely at risk - take precautions
More than 10 pts above	At risk - take action

Level of Risk Tolerance

Not all levels of worker impairment necessitate protective action. The level of risk that management will or will not tolerate, how a company deploys and utilizes Druid, and its threshold for taking action in response to an elevated impairment score is usually a function of these seven factors:

1. **CULTURE:** *The company's culture of safety and commitment to risk mitigation.*

2. **RISKS:** *The probable risk of workers being injured or harmed while on duty.*

3. **HARMS:** *The severity of these potential injuries and harms.*

4. **COSTS**: *The potential costs associated with these injuries and harms, including:*

   - Business disruption and lost productivity
   - Legal fees, judgments, and settlements
   - Increased insurance premiums
   - Equipment repair or replacement
   - Government fines and penalties
   - Damaged employee morale and turnover
   - Damaged reputation

5. **LOGISTICS**: *The amount of time, and the locations available, for supervised testing, considering the size of the worker population being tested and the value to the company of worker productivity.*

6. **RESOURCES**: *The availability of financial resources and mid-management staff to investigate an individual's significantly elevated Druid score.*

7. **SCOPE**: *The circumstances under which testing will be done.* Testing conditions can include on or more of the following options:
   - As a pre-employment requirement
   - On a regular schedule (i.e., before, during, and/or at the end of each shift)
   - On a random schedule
   - Following a workplace accident
   - When there is reasonable suspicion that a worker is impaired
   - When a worker returns to duty after taking sick days or personal days
   - As a condition of probation
   - Prior to promotion
   - On a voluntary basis

Examples of Deployment Options

Below are four representative ways to deploy the Druid Fit-for-Duty App along with hypothetical examples. *These are examples only.* Because the mix of conditions vary so widely from company to company, there are, of course, many other ways to deploy Druid and to use the test results.

#1 - Goldilocks Option

This option is a straightforward way to implement Druid - not too simple, not too complex.

The *ABC Corporation* builds modular containers. There are 50 people in the company's work crew. The work is not without risk but not terribly dangerous. The likelihood of injury is low to moderate and the potential harm from an injury covers the spectrum from minor to fatal, although the risk of minor injury is far greater than that of severe injury. The company has excellent relations with its employees, genuinely cares about their safety, and routinely takes steps to attempt to increase their individual productivity.

For those reasons, the company is particularly concerned about the recent legalization of cannabis in its state. It used to drug test new hires for cannabis but found, even before cannabis legalization, that doing so created an additional formidable barrier to hiring new employees in an already difficult hiring market. The company realizes that disciplining an employee for a positive cannabis test *without proving impairment* is of no value in protecting worker safety and productivity and that doing so is likely to be adjudicated as illegal in its state.

The company starts each workday with an all-hands "morning meeting" to discuss the day's work. The company's operations manager leads the meeting. He also happens to be the company's safety supervisor and, informally, he has always kept an eye out for the common signs of impairment. Separately, the company drug tests its employees randomly and when there is reasonable suspicion of impairment.

With the company owners' buy-in, the operations manager introduced Druid to the morning meeting in order to assess whether their crew was fit for duty at the start of each day. Qualifying as fit for duty included being unimpaired from the effects of cannabis. At the morning meeting, all employees now take the 1-minute Druid test simultaneously on their own smartphones. Those without a smartphone, as well as those who object to taking the tests on their own phone, use company-supplied tablets.

After the morning meeting, the operations manager returns to his office and uses Druid Enterprise to take a quick look at the day's test scores on his computer. During the first month of testing, employees typically scored within 2 or 3 points of their baseline scores. Occasionally, some employees scored 4 or 5 points above baseline, but when following up, the operations manager did not discern any actual impairment that he thought might put those employees, their coworkers, or the company at risk.

One morning, an employee's Druid score was 12 points above baseline. Concerned, the operations manager brought the employee into his office and had him take the 1-minute test again. The second score was similarly above baseline. The employee seemed a bit nervous but otherwise showed no additional signs of impairment. The operations manager asked him if he was using cannabis or any other drug. The employee vigorously denied it. When asked if there was anything going on at home or elsewhere in his life that he was worried about, the employee admitted he had been awake all night without sleep. Asked why, he broke down and revealed that his daughter had been admitted to the hospital with a life-threatening illness and that he was sick with worry.

The manager sent him home to be with his family and thus avoided the possibility of a distracted - and effectively impaired employee - causing harm to himself or others or otherwise impacting that day's work. Recognition of a serious problem that probably would not otherwise have come to light but for Druid, or have come to light so quickly, generated appreciable goodwill with the employee.

This small company, where managers and employees are on close terms, has not determined any specific Druid score that would trigger close scrutiny of employees for additional signs of impairment. Instead, management reacts to elevated Druid scores on an individualized, holistic basis, making all reasonable efforts to get the relevant facts and then deciding how best or respond to the employee and protect the company.

The large company described in the next hypothetical example operates under entirely different conditions and therefore uses Druid in a completely different way.

#2 - Pass/Fail Option

With this option, employers admit or turn away workers from the job site based on their Druid score at the beginning of their shift. This option may be particularly appropriate on a job site where hundreds or thousands of workers are converging at the same time to report for work. With such a large workforce, some companies find it impossible to devote the time necessary to investigate what is causing workers' elevated Druid scores and to take remedial action.

To use this option, the company's management team needs to select the threshold above which workers will not be allowed to start their shift - that is, the minimum number of points above the workers' baseline score that will deny them admission to the job site. What threshold management selects will be informed by the company's level of risk tolerance, as determined by its culture of safety, the severity and potential costs of those potential injuries and harms, and the degree of impairment represented by different levels of elevated scores (see Table 1).

Management must also decide how long a worker might be barred from entry - an hour, a half day, a day, or longer. This decision also depends on the company's level of risk tolerance but, as well, on the worksite's location and on the workers' living situation. Are there locations nearby where workers can safely wait before returning to the worksite to be tested again? Do workers live in company-provided quarters on or near the premises? If not, do they live close by or a short commute away, or do they commute a long distance?

Consider this example**.** *DEF, Inc.* is a large construction company whose work frequently entails significant safety risks. The workers on site are expected to take on different types of work assignments as needed. Depending on the project and assignment, the likelihood of workers suffering ranges from low to high, and the severity of injury can range from minor to fatal. The company is firmly committed to safety and risk mitigation.

For a current project, the company has as many as 1,000 workers or more reporting for duty at the same time each morning. The work site has five entry points. In this case, the challenge the company faced was how to test all of these workers' fitness for duty without losing significant work time.

At the start of each shift, supervisors assemble workers in groups, up to 50 workers at a time, and have them take the 1-minute Druid Rapid Test on their own smartphones, all at the same time under light supervision. With this procedure, a single supervisor can process 200 workers in around 10 minutes. With four job site entry points, five supervisors can process all 1,000 employees in the same 10 minutes. The test itself only takes 1 minute, but time is also needed to assemble and disperse each group.

After consideration of its level of risk tolerance, management has determined that the company's Druid threshold score would be 10 points, meaning that any workers with a Druid score greater than 10 points above their baseline - a level specified as "*At risk*" (Table 1) - would require further scrutiny before being allowed to enter the work site.

Accordingly, workers who score *above* this threshold score are told to assemble and take the test a second time. If their second score is consistent with the first, they are dismissed for the entire day. All other workers are admitted to the site. [2] Presently, supervisors do not interview workers with elevated scores to investigate cause. Separately, the company follows and alcohol and drug testing protocol when a worker is suspected of being impaired while on the work site.

The company is considering a new follow-up protocol for workers with start-of-shift scores 4 to 10 points above their baseline who were granted entry to the work site. With this option, supervisors would select workers for a brief interview. Based on all the evidence, any workers found to be unfit for duty may be sent home, reassigned to less risky duties, or given an alcohol or drug test if warranted. For the moment, however, the company uses only the pass/fail protocol.

There are a number of ways for companies that are using the pass/fail protocol to handle how workers are admitted to the worksite after their Druid test.

- Manually. Supervisors can be stationed at each entry point. When they reach the entry point, workers show the supervisor the Druid score page on their smartphone which indicates how many points the current score is above or below that person's baseline (see Figure 2). At a glance, the supervisor can deny entry to workers whose scores exceed the company's Druid threshold score.

- By Email. Druid currently contains a feature option that sends supervisors an immediate email alert if a worker's elevated score exceeds the company's preset threshold. Supervisors will be able to identify by name which workers should not gain entry to the work site.

- Semi-Automated. To speed up this process, the company can arrange with ISI to add an additional feature so that Druid displays a green or red screen to indicate whether a worker's score is below or above the company's pre-set threshold, making it unnecessary for supervisors to examine the Druid score page.

- Automated. The company can arrange with ISI so that workers' Druid scores, plus the pre-set threshold level, is incorporated into a company's own current safety app software or into each worker's entry card, whether that card utilizes RFID, barcode, Bluetooth, or other technology.

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[2] Because Druid takes only one-minute, other companies might require their workers with elevated scores to retake the test multiple times.

#3 - High Productivity Option

As the most comprehensive option for using Druid, this option offers a company an opportunity to maximize worker productivity through a systemic exploration of why a worker has presented an impairment score that exceeds the company's pre-set threshold. As shown in Figure 3, this is a problem-solving approach that demonstrates mutual concern for both the worker's well-being, realigns the employer-employer relationship away from punitive disciplinary measures, and promotes employee retention. This option may be particularly appropriate when skilled workers are scarce or where every minute a worker spends on task is extremely valuable to the company.
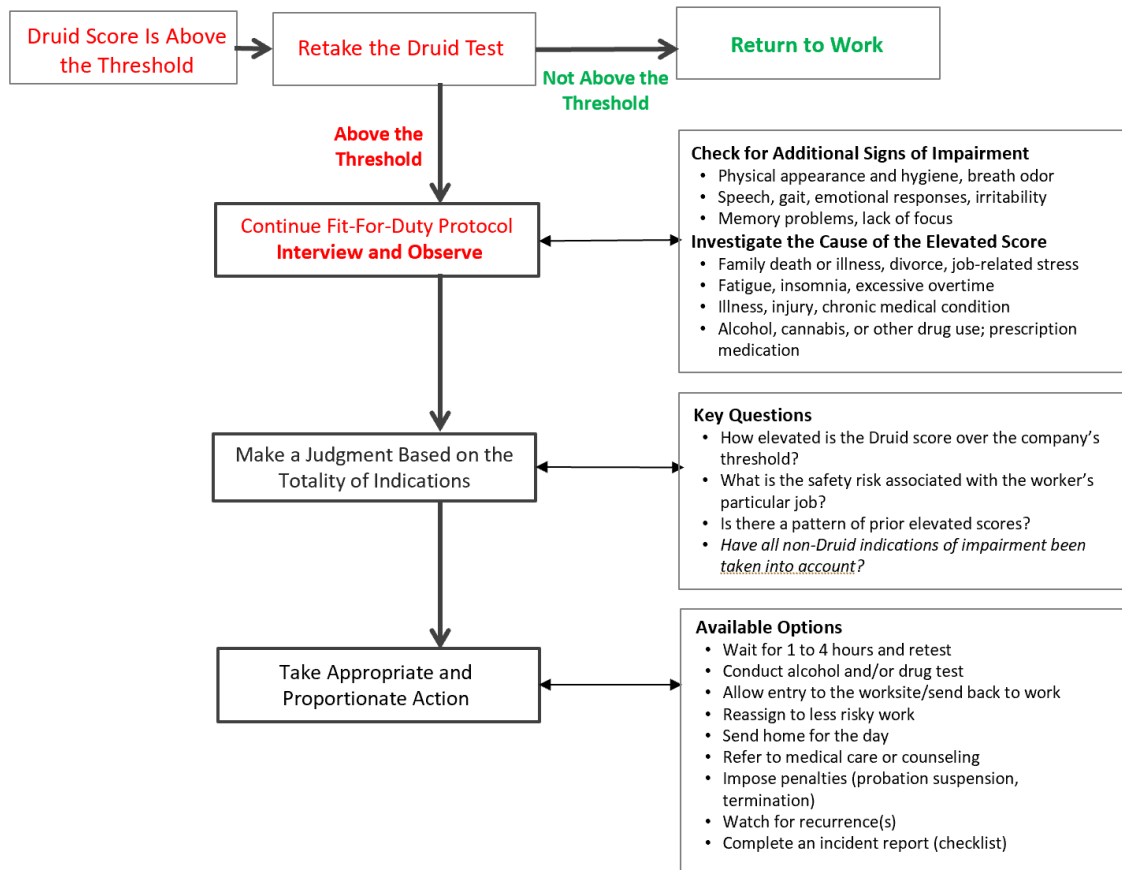
The *GHI Company* runs a highly-profitable, deep-underground mine to extract rare earth metals. The mine's injury rate is relatively low because the company has implemented optimal safety measures at every level. At the same time, however, when there is an injury, it can be serious, sometimes fatal, and in every case will disrupt the mine's operations. Because the miners work closely together underground in cohorts and in small spaces, some accidents result in members of the cohort being injured. The work is physically demanding and therefore the risk of fatigue-induced impairment increases over the course of the shift. The miners' tour of duty is for extended periods of time, and because the mine is isolated in a remote location, they live in company-provided housing and seldom, if ever, go off site. This also means that there is no easy or quick way to replace a worker who is not fit to work.

The mine works around the clock, seven days a week, with three 8-hour work shifts each day. With Druid, the company is trying to keep the maximum number of its employees working, and working as productively as possible. The company employs 300 miners with 100 assigned to each shift. The miners assemble in cohorts on site at the start of their shift and take a supervised Druid test before going down into the mine. Based on a determination of the company's level of risk, it has determined that any Druid score greater than 4 points above a worker's baseline score will subject the worker to further scrutiny.

A miner who exceeds this threshold is required to retake the test in front of his supervisor. The miner can proceed into the mine if the second test is at or below the threshold but will be interviewed by the supervisor if it is above the threshold. The interviews follow the company's standard protocol, with the supervisor observing the worker's appearance and demeanor and then asking questions to explore possible causes of the elevated score.

Depending on the evidence gathered, including the two Druid scores, the supervisor forms a judgment about the individual's fitness for duty and decides on a course of action (see Figure 3). *Stated simply, the company utilizes Druid scores as a leading, but by no means dispositive, indicator of impairment.*

Figure 3. Decision Flowchart for Responding to Elevated Druid Scores

Druid Score Is Above the Threshold → **Retake the Druid Test** → **Return to Work**

Not Above the Threshold

Above the Threshold

Continue Fit-For-Duty Protocol Interview and Observe

Check for Additional Signs of Impairment
- Physical appearance and hygiene, breath odor
- Speech, gait, emotional responses, irritability
- Memory problems, lack of focus

Investigate the Cause of the Elevated Score
- Family death or illness, divorce, job-related stress
- Fatigue, insomnia, excessive overtime
- Illness, injury, chronic medical condition
- Alcohol, cannabis, or other drug use; prescription medication

Make a Judgment Based on the Totality of Indications

Key Questions
- How elevated is the Druid score over the company's threshold?
- What is the safety risk associated with the worker's particular job?
- Is there a pattern of prior elevated scores?
- *Have all non-Druid indications of impairment been taken into account?*

Take Appropriate and Proportionate Action

Available Options
- Wait for 1 to 4 hours and retest
- Conduct alcohol and/or drug test
- Allow entry to the worksite/send back to work
- Reassign to less risky work
- Send home for the day
- Refer to medical care or counseling
- Impose penalties (probation suspension, termination)
- Watch for recurrence(s)
- Complete an incident report (checklist)

Beyond start-of-the-shift Druid testing, the company also tests the miners at the end of their shifts to evaluate whether they are experiencing a concerning level of fatigue-induced impairment. Moreover, the depth of their end-of-shift fatigue may increase as their tour of duty proceeds over several weeks, even to the point where their start-of-shift scores become a concern. With this information, management can evaluate the level of fatigue associated with certain jobs in the mine, after which they can reassign identified workers or cohorts to different jobs or work schedules to reduce their fatigue and give them more time to recover before they start their next shift. It also allows the company to compare the aggregate fatigue level suffered by whole shifts and to consider modifications to the entire shift schedule.

With Druid Enterprise, companies have a record of every workers' daily Druid scores which can be displayed graphically over any period of time (days, weeks, months, or years). The scores can be presented of all workers, a single individual, or specified subgroups as defined by either a single variable or combination of variables, including worksite, department, cohort, specific job, assigned shift, age, gender, or any other variable the company wants to track.

With this information in hand, management can look for patterns to gain insight into the existence or causes of their workers' elevated scores. For example, a worker who is only intermittently presenting elevated scores may be engaging in behaviors, such as off-hours alcohol or drug use, that reduce their fitness for duty when they are to start their shift.

#4 - Targeted Use Option

This protocol may be the most appropriate option when only a subgroup of the company's workers is in safe-sensitive jobs.

JKL, Inc. is a metals fabrication company with 150 employees. The work can be dangerous and so even small mistakes can have enormous costs. Many employees work at or near large blast furnaces whose radiant heat causes the facility to reach temperatures above 90 degrees for most of the year and even higher temperatures during summer heat waves. Moreover, when working at the furnaces, the employees must wear heavy, full-body protective clothing and gear; this magnifies their risk of dehydration and mental and physical fatigue, which in turn can lead to heat exhaustion or heat stroke. In addition, they also have to cope with toxic fumes and high-decibel noise.

Employees can work at the furnaces for only limited periods of time, and therefore the company periodically rotates them in and out of that job during their work shift. Each person reacts to heat differently, of course, but with few workers admitting their exhaustion, management has found it challenging to set an effective rotation schedule.

The company is committed to the highest level of safety, but profit margins are modest. Even so, the time, expense, and attention devoted to Druid are more than offset by its value. Indeed, because scientific research has shown that high temperatures slow down reaction time and reduce hand-eye coordination, Druid is a particularly effective tool for assessing heat-related impairment. Currently, the company has limited its Druid testing the employees who work the blast furnaces.

Once inside the facility, all workers complete a start-of-shift test under supervision. The company requires any worker scoring more than 7 points above their baseline to retake the test. Because most of the company's workers live near the facility, anyone who retests above the threshold is interviewed briefly to determine whether there is cause to test for drugs or alcohol. If not, depending on how much at variance their current score is from their baseline, some furnace workers are reassigned to less risky duty. But those with scores particularly elevated above the threshold may be sent home for the day.

After the start of work, employees who work at the blast furnaces are tested throughout the day. They work a series of mini-shifts lasting 30 minutes, with each shift followed by a 30-minute rest and then another Druid test. They cannot return to working at a furnace unless their Druid score is at or below the 7-point threshold.

Furnace work is difficult, exhausting, and dangerous work and therefore the hiring of qualified workers and employee retention are critical issues for this company. To determine whether new hires would be able to manage the job's cognitive and physical demands, the company requires pre-employment Druid testing. Applying Druid's *Objective Standard*, any applicant whose baseline score is in excess of 44 points - a Druid score other than "Excellent" or "Good" - receives extra scrutiny during the employment vetting process.

By having the means to help filter out unsuitable candidates for the job and by having a quantitative and objective way to measure the impairment experienced by blast furnace workers, this company is able to experiment - methodically and rationally - with the number and duration of the mini-shifts, and thereby increase safety, morale, and productivity.

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Advanced Discussion - Applying Druid's Objective Standard

Most companies elect to apply the *Personal Standard* protocol which compares each worker's current Druid score to their baseline score. There are times, however, when the *Objective Standard* protocol can be especially useful.

When considering a new hire, an applicant's baseline score, established by taking three or more tests, can help determine whether the applicant's capabilities are consistent with the risks presented by that particular job or other work assignments that the applicant may be asked to do.

For example, an applicant who has worked on scaffolding for many years, perhaps an entire career, is likely to have gained the knowledge, skills, and experience - a mastery of the job - that helps him to avoid injury. Druid is an objective test of cognitive and physical impairment. Therefore, if an applicant establishes an initial Druid baseline of 55, for example, that could signal, despite the applicant's mastery, that he is, nonetheless, impaired and could be a risky hire. As earlier explained, this score is approximately what a person with a 0.08% BAC (blood alcohol concentration) would have. The applicant's apparent impairment could be due to any number of possible causes - some of them temporary but others enduring - which can be explored as the job interview continues.

Applying the *Objective Standard* is particularly valuable for employees in safety-sensitive jobs that entail extreme risk. Consider these examples: a crane operator working on a crowded job site or several stories up on a new skyscraper; a pilot flying a jetliner with several hundred travelers; a truck driver transporting hazardous chemicals. If these workers were to make a mistake, or if they were unable to respond appropriately to an emergency, the consequences would be catastrophic and tragic. Depending on its tolerance for risk, each company must make its own determination about which Druid score will serve as the threshold above which their workers will be subjected to additional scrutiny before being allowed to work.

For ADA purposes, where a disabled or older individual cannot meet such a threshold because of the individual's immutable cognitive or physical abilities, then applying Druid's *Personal Standard*, linked to specific job-related criteria, is the recommended approach.

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Worksheet
Establishing Your Company's Druid Threshold Score

This worksheet is intended to prompt and help a company's management team to think about the safety risk their employees face, its consequence to the company, and the various factors that should be taken into account when deciding how Druid will be deployed and utilized, the level of risk the company can tolerate, and the threshold score that will be adopted when using the *Personal Standard* protocol.

These are complicated decisions and there is no simple formula that can be followed to come up with the right answers. It is important, therefore, that your management team devotes the time necessary to analyze your particular circumstances, weigh the pros and cons of the available options, and come to an agreement about the best decisions for your company. This worksheet intends to guide you to exercise prudent judgement in coming to your own conclusions about safety risk and its mitigation.

Directions: Put a checkmark above the number that best represents your response. Next, add up your total worksheet score and then refer to the final section for guidance on how to establish your company's threshold score when using Druid's *Personal Standard* protocol.

1. **CULTURE**

   How committed is the company to creating a culture of safety and risk mitigation? (Check One)

   Extremely Committed ____ ____ ____ ____ ____ Not Very Committed
                                      1   2   3   4   5

2. **RISKS**

   How likely is it that any company employees could be injured or harmed while on duty?

   Very Likely ____ ____ ____ ____ ____ Very Unlikely
                       1   2   3   4   5

3. **HARMS**

   If any company employees were injured or harmed while on duty, how likely is it that the injury or harm they suffered would be severe?

   Very Likely ____ ____ ____ ____ ____ Very Unlikely
                       1   2   3   4   5

4. **COSTS**

   How high are the potential costs, both financial and otherwise, that could result from injuries and harm that your company employees might suffer?

   Very High ____ ____ ____ ____ ____ Very Low
                     1   2   3   4   5

5. **SCOPE**

   Considering how the company would deploy and utilize the Druid app, what is the size of the worker population that would be tested for impairment?

   _____ _____ _____ _____ _____
   1-24 = 1   25-99 = 2   100-249 = 3   250-499 = 4   500+ = 5

6. **LOGISTICS**

   How likely is it that the company could set aside adequate time and make locations available for supervised impairment testing?

   Very Likely ____ ____ ____ ____ ____ Very Unlikely
                       1   2   3   4   5

7. **RESOURCES**

   How likely is it that the company would have sufficient financial resources and mid-management staff to support investigation of an individual's significantly elevated Druid score?

   Very Likely ____ ____ ____ ____ ____ Very Unlikely
                       1   2   3   4   5

Total Worksheet Score: _____

The greater your total worksheet score, the higher the Druid threshold score your company may wish to establish. At one extreme, a total score of 35 (the maximum) would mean that:

- the company has not made a strong commitment to creating a culture of safety and risk mitigation;
- employees are very unlikely to be injured or harmed while on duty;
- the injury or harm employees might suffer is very unlikely to be severe;
- the potential costs that could result are very low;
- the number of employees that should be tested is very large;
- it is very unlikely the company could set aside adequate time and make locations available for supervised testing; and
- it is unlikely the company would have sufficient financial resources and mid-management staff to investigate an individual's significantly elevated Druid score.

Given this profile, the company may wish to establish a threshold level of 10 points above the workers' baseline scores when outlining its *Personal Standard* protocol, a level above which the company should take definitive action to investigate an individual's fitness for duty.

At the other extreme, with a total score of 7 (the minimum), the company may wish to establish a threshold level of 2 points above the workers' baseline scores, a level above which the company should take notice of an individual's score and monitor future tests.

The table shown below provides a rough guide for determining a company's threshold score based on the total worksheet score.

Total Worksheet Score	7	11	14	17	21	24	27	30	33+
Possible Threshold Score	2	3	4	5	6	7	8	9	10

A complicating factor when using this table is that a company may or may not give equal weight to each of the seven factors itemized on the worksheet. For example, when determining its threshold score, a company might assign a greater priority to the potential risk of a fatal injury or a catastrophic accident or to one that might impact an entire neighborhood or community, while another company where the employees are likely to suffer only minor injuries might assign a greater priority to the high frequency of such incidents at its worksites.

Also bear in mind that a worker's baseline score, itself, remains an important, as having a high baseline score could *compound the risk* presented by a current Druid score that is above that baseline. By the same reasoning, with a low baseline score, the same-sized increase over the baseline score would not be as alarming. To take a specific example, a current test score that is 5 points over a baseline score of 50 would be of greater concern than one that is 5 points over a baseline score of 40.