

READI™ REAL-TIME & PREDICTIVE ALERTNESS MANAGEMENT

**FATIGUE IS FOUR MORE TIMES LIKELY TO CONTRIBUTE TO
WORKPLACE IMPAIRMENT
(INCLUDING DRIVING TASKS) THAN DRUGS OR ALCOHOL**

Source: Centre for Accident Research and Road Safety – Queensland (CARRS)

CIRCADIAN AUSTRALIA is a 100% Australian owned and operated for more than 12 years, affiliate of Boston based **CIRCADIAN TECHNOLOGIES Inc.**, world leaders in fatigue Risk Management Research and Consulting for more than 35 years. We design and deliver scientifically validated Fatigue Risk Management Solutions 'FRMS' incorporating our Business Partner Fatigue Science's READI™ REAL-TIME & PREDICTIVE ALERTNESS MANAGEMENT objective sleep and alertness data and analytics.

CIRCADIAN AUSTRALIA works with our Vancouver based Business Partner Fatigue Science, world leaders in delivering ReadI™ real-time and predictive alertness solutions.

Together we enable organisation's and their people to **take the guesswork out of knowing their real-time alertness and predicting their levels of impaired alertness and risk of lapse, up to 18 hours ahead.**

It is widely acknowledged that sleep loss and circadian disruption from shift work and rotating shifts contributes to accidents, errors and incidents, and adversely impacts mental and physical health, wellbeing and sustainable resilience/performance.

To understand and manage sleep, real-time and predictive alertness, you need more than just a sleep tracker. That's why professionals in demanding high-risk jobs, from heavy industry to pro-sports and to the military rely on Fatigue Science ReadI™ to measure, manage and enhance their alertness.

Developed with proprietary algorithms from the US Army Research Lab, ReadI™ is the only validated system that can understand the cumulative effects of sleep and translate them into an **objective, predictive measure of one's alertness (fatigue).**

With **Predictive Data**, it's possible to mitigate risk in ways that were previously impossible.

Mitigating fatigue risk starts with empowering your workers to understand and predict their own level of alertness, and to develop and sustain positive habits (sleep hygiene) based on their real sleep data. CIRCADIAN AUSTRALIA works with your people delivering **Education and Awareness** and confidential one-on-one **Sleep Coaching** to enhance their sleep and alertness to **reduce risk, improve safety, performance, health and wellbeing** even further.

Readi / Band™ by / FATIGUE SCIENCE



Unique Features:

- ReadIScore and Fatigue Risk Warnings on Screen
- Group Sync
- 30-Day Battery Life

SCIENTIFIC VALIDATION

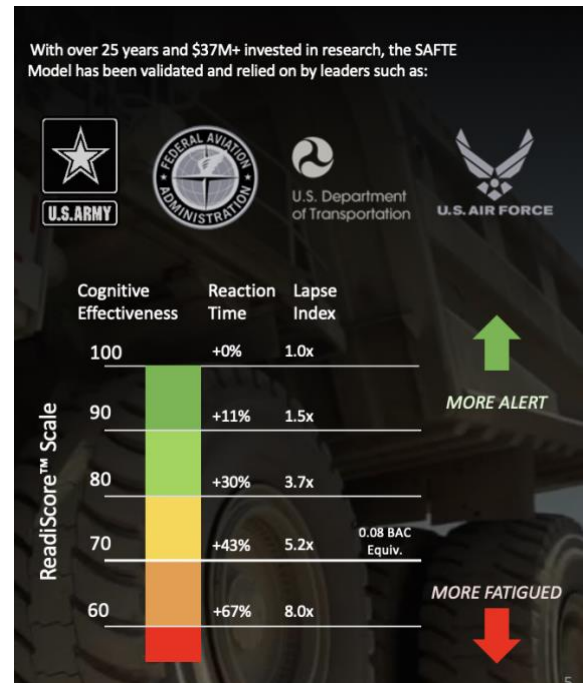
What is a **ReadiScore™**?

What is the **SAFTE™ Biomathematical Fatigue Model**?

Since the 1990s, the **SAFTE™ Biomathematical Fatigue Model** has been considered the “gold standard” for biomathematical sleep models by leaders in fatigue risk management throughout academia, military, and heavy industry. Its output is the basis of our **ReadiScore™**.

The model was developed by the **US Army Research Lab with 25 years and \$37M+ of research**. Fatigue Science owns the **exclusive worldwide commercial license** to this model and makes it useful for industrial applications via the **Readi Enterprise Suite**.

The **SAFTE™ Model** has been studied in over **13 published and academic papers** and is widely regarded as the leading biomathematical sleep analysis model by experts and agencies, including the **US Department of Transportation, Federal Aviation Administration, and US Department of Defense**.



READI/SUPERVISE™ – REAL-TIME AND PREDICTIVE ALERTNESS

READI/SUPERVISE™ enables you to see the levels of real-time and predictive impaired alertness in your workplace on any web browser, empowering you to plan, intervene and to reduce workplace risk by predicting the time your people will be at an elevated risk of a fatigue related accident, incident or error.

- Tailor the predictive view to your workplace fatigue management policies by setting the SAFTE™ threshold
- Understand the levels of impaired alertness in your workplace at a glance and filter by group function
- Highlights the time until an employee reaches your selected SAFTE™ threshold
- Enables you to identify ‘fatigue hotspots’ in your organisation’s activities




READI/ANALYTICS™

READI/ANALYTICS™ enables industrial management teams and crew supervisors to work together to **reduce workforce fatigue levels**, driving **higher productivity**, **enhancing safety** and **reducing costs**.




DATA PRIVACY


ReadiAnalytics is a **privacy-first solution** designed to provide aggregated insights to management and supervisors while maintaining the privacy of workers' personally-identifiable sleep and fatigue data.




Personally-Identifiable Data




Personal Sleep Data




Personal ReadiScores

 **Private**

Personally-identifiable sleep data is not exposed to customer management or employees. Anonymized data shared via ReadiAnalytics.

 **Private**

Personally-identifiable Readiscores (fatigue data) are not exposed to customer management or employees. Anonymized data shared via ReadiAnalytics.



To aid in the encouragement of ongoing use, ReadiAnalytics can optionally present personally-identifiable **usage statistics** (e.g. how often a user wears device or syncs their data) with supervisors and management.

COMPARE SEGMENTS

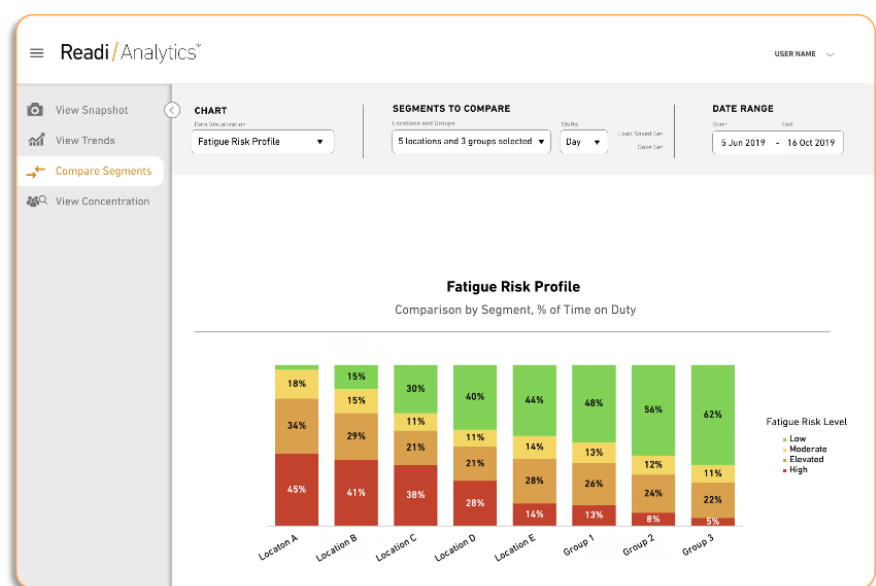
Ascertain which specific crews, sites, and shift patterns are generating disproportionate levels of risk exposure and/or highest performance levels, relative to each other and to overall benchmarks.

Actions for Management

Focus on risk mitigation
Adopt low risk shift patterns

Actions for Supervisors

Focus on risk mitigation
Support fatigued crew



READI/ANALYTICS™

View Risk Concentration

Determine whether a group's risk exposure is **concentrated among a few workers** dispersed more evenly, all while maintaining worker privacy.

Revelations of highly concentrated risk indicate a **potential high return** to investments in sleep health assistance programs.

Example: The **most fatigued 14%** of MineCo Hauling workers **contributed 55%** of total on-duty fatigue risk.

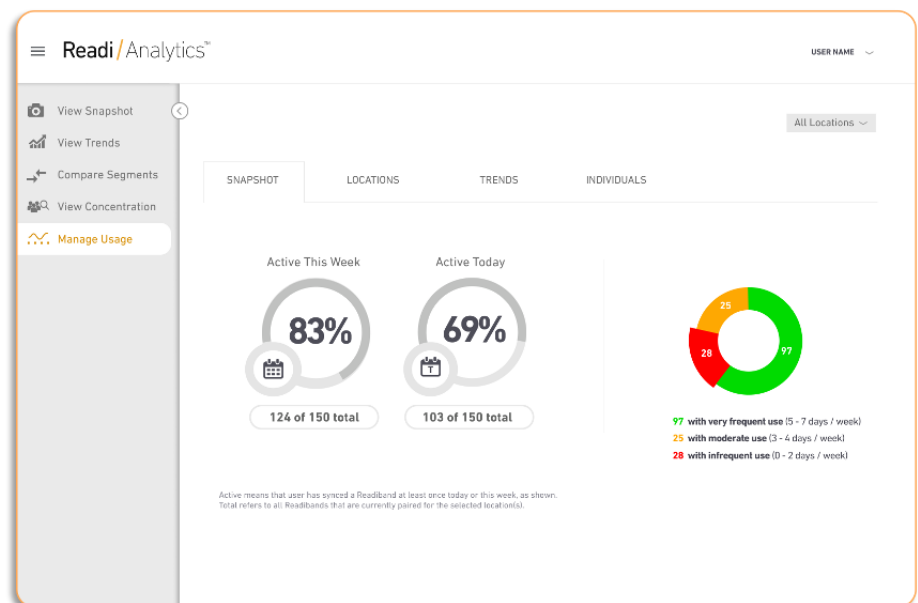
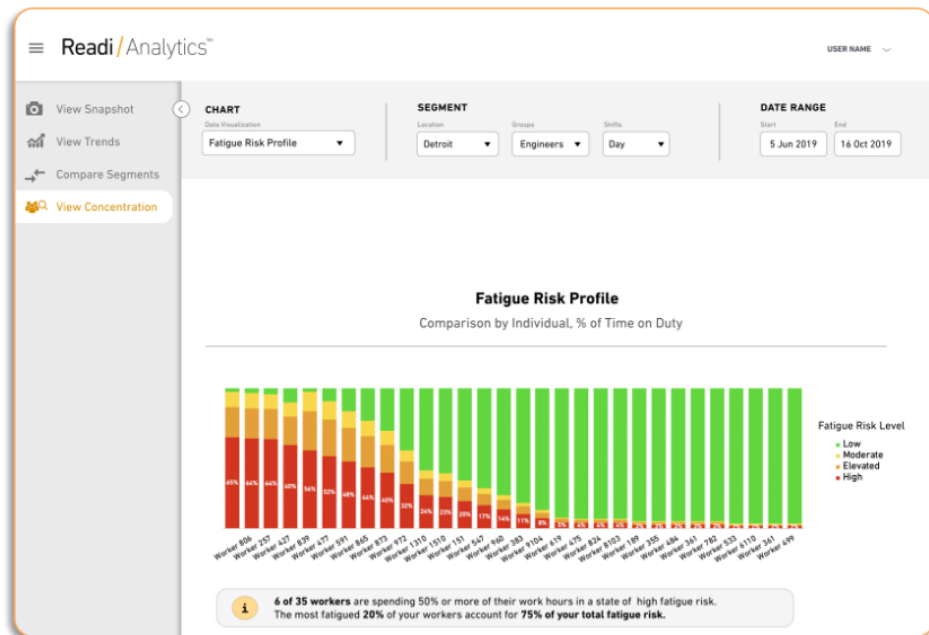
Actions for Management

Invest in sleep coaching programs to determine disrupted and inadequate sleep causal factors and support enhanced sleep and alertness.

Track & Manage Participation

Encourage ongoing Readi™ usage in your workforce by monitoring participation levels in the Readi™ program & consider recognition of improved workplace alertness.

Observe rates of data capture and data syncing, at a group and individual level, all while preserving complete privacy of personally-identifiable sleep and fatigue data.



Readi™ /

Real-Time and Predictive Alertness Awareness

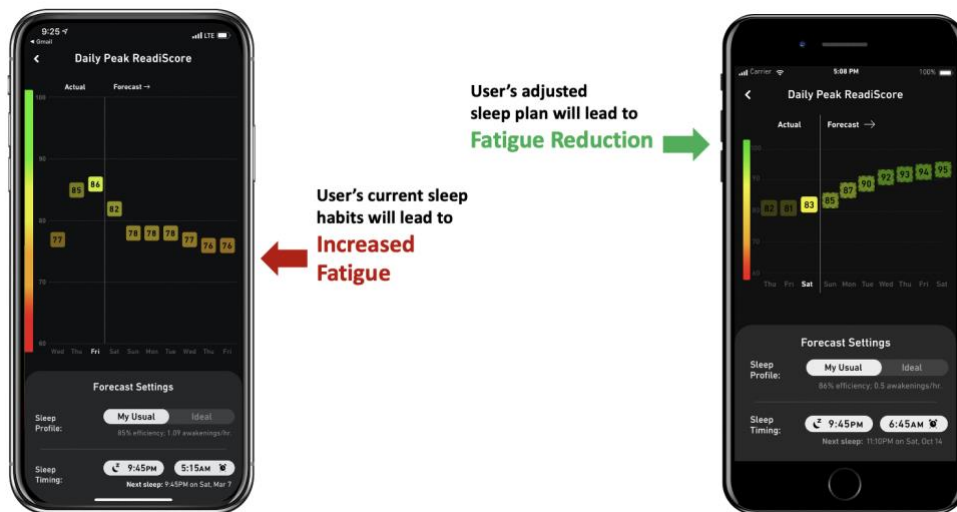
See Upcoming Fatigue At A Glance

Readi™ gives people a real-time and predictive at-a glance view of their personal Readiscores (impaired alertness / slower reaction time), revealing if and when they will face critical fatigue risk up to 18 hours ahead.



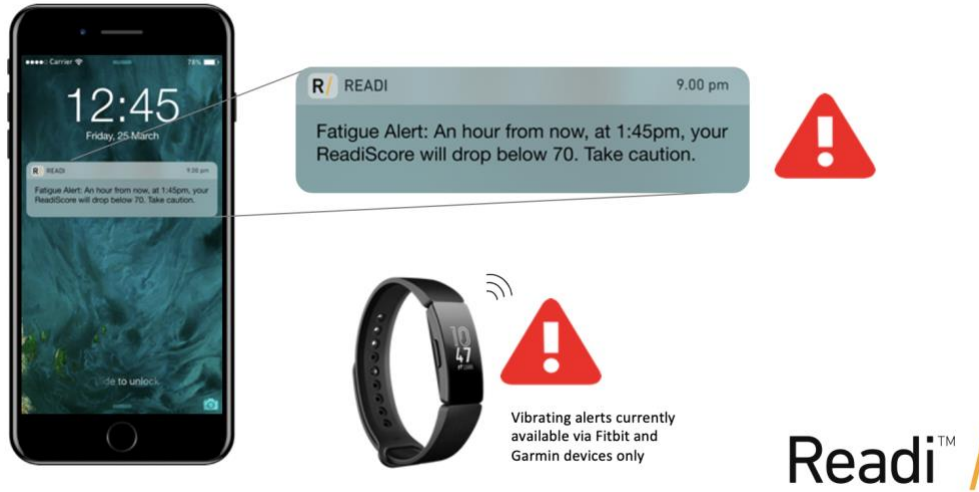
14-Day Performance Forecast

Readi™ gives people a 14-day forecast of their Readiscores if current sleep routines and sleep habits continue, enabling more proactive self-management and fatigue reduction.




Get Personal Fatigue Alerts

Readi™ provides mobile and vibrating alerts to inform workers of imminent upcoming periods of critical fatigue.





Device Compatibility


Readi™ is compatible with a broad and growing ecosystem of validated sleep tracking devices.

R/ Fatigue Science
ReadiBand™ 

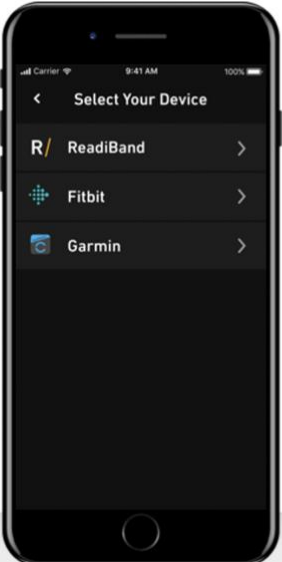

✓ **Supports Group Sync functionality**
Does not currently support vibrating wrist alerts (coming late 2020).

 **fitbit.** 

✓ **Supports vibrating wrist alerts**
Does not currently support Group Sync functionality.
Heart-rate based Fitbit devices recommended for accuracy.


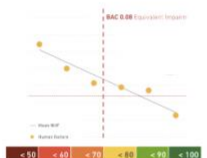

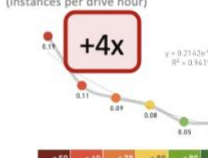
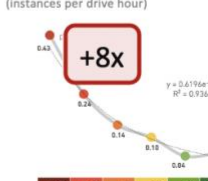



GARMIN. 

✓ **Supports vibrating wrist alerts**
Does not currently support Group Sync functionality.
Heart-rate based Garmin devices recommended for accuracy.

Readi™

Correlation to Real-World Performance Outcomes

Railroad	Trucking	Mining	Construction
<p> U.S. Department of Transportation</p> <p>Based on research by US Dept. of Transportation and Federal Railroad Admin., a railroad operator is more likely to get into an accident – and on average a 5x more costly one – when their ReadiScore reveals high fatigue.</p> <p>ReadiScore vs. Accident Propensity</p>  <p>ReadiScore vs. Accident Cost</p>  <p>Validation and Calibration of a Fatigue Assessment Tool for Railroad Work Schedules, Hursh et al.</p>	<p>A Fatigue Science empirical study of client telematics data affirmed similar findings, revealing that drivers operating with a ReadiScore < 50 are 8.5x more likely to excessively speed and 4x more likely to brake harshly.</p> <p>ReadiScore vs. Harsh Braking (instances per drive hour)</p>  <p>ReadiScore vs. Excessive Speeding (instances per drive hour)</p>  <p>Fatigue Science Transportation client study, 2016</p>	<p>A Fatigue Science empirical study of a major mining deployment found a 14x higher incidence of video-verified microsleeps when ReadiScores are <70, and the study revealed productivity benefits of over 3% in terms of Dig Rates and Spot Time when workers are operating with ReadiScores > 85 vs. < 70.</p> <p>Microsleeps per Hour, by ReadiScore:</p>  <p>Dig Rate: +3.2%</p> <p>Spot Time: -3.3%</p>	<p> Transport for London </p> <p>The use of Fatigue Science's Readi Enterprise Suite by Dragados, a construction contractor for Transport for London, produced to data-driven insights that enabled schedule optimizations resulting in monthly output improvements of 32%, by significantly increasing the portion of "high productivity" hours on a 24/7 operation.</p> <p>Moreover, Readi supported fatigue risk reduction that led to improvements in workers' sleep habits and sleep opportunity, which ultimately drove an estimated 30% reduction in sick days.</p> <p>Monthly Output: +32%</p> <p>Sick Days: -30%</p>



For further information about CIRCADIAN AUSTRALIA Readi™ Health, Wellbeing and Sustainable Resilience Programmes customised to meet the needs and challenges of your business contact:

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