



ATA Associates Inc and Pharma Flight

 **NAFMP Solutions Series**
North American Fatigue
Management Program

February 22, 2024

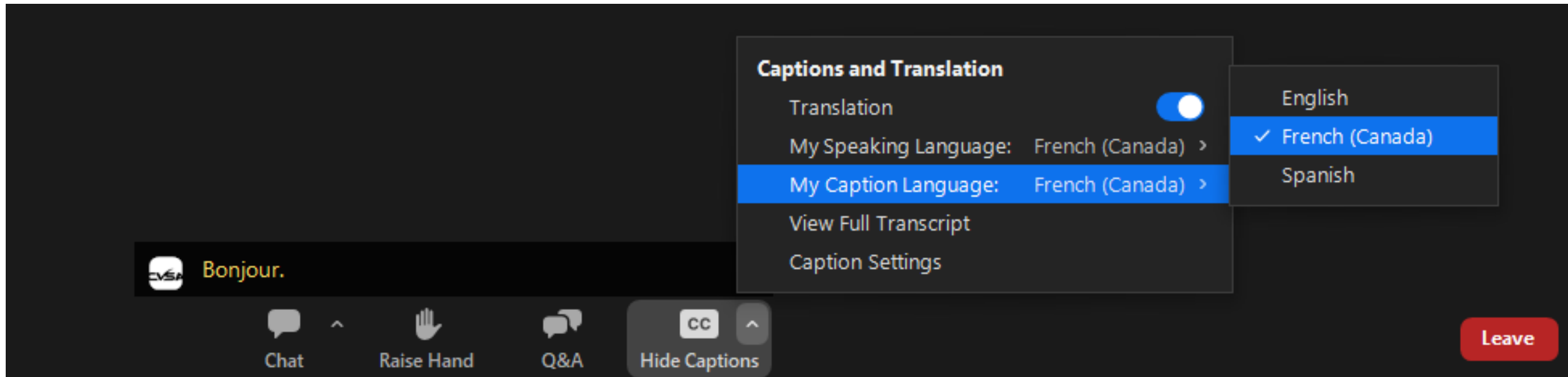
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Featured Speaker



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1. Fatigue Management and Vendor Solutions
2. ATA Associates Inc and Pharma Flight Presentation
3. Questions

- Neither the Commercial Vehicle Safety Alliance (CVSA) nor the NAFMP endorses or recommends any specific product or service
- The claims and system specifications of vendors have not been validated by CVSA or the NAFMP
- Solutions are a key component of a Fatigue Management Program

1. Safety Culture

- Education & Training

2. Fatigue Risk Management System

- Sound Scheduling Practices
- Sleep Disorder Screening & Treatment Program
- Fatigue Management Technologies

1. nafmp.org
2. [Implementation Manual](#)
3. [eLearning Platform](#)
4. [Train-the-Trainer: Module 5](#)
5. [PowerPoint Presentations](#)
6. [ROI Calculator](#)
7. [Webinars – Slides/Recording & Future](#)
8. [FMP Template](#)

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A.W.A.R.E.

ADVANCED WORKER AWARENESS to REDUCE ENDANGERMENT

- A Fatigue and Stress Testing Program
 - In Partnership with PharmaFlight

Agenda

- Introduction
- The Problem – Fatigue
- Fatigue Stats
- AWARE
- ATA Associates
- PharmaFlight
- AWARE/PHAPA Device
- Testing Results
- AWARE Benefits
- Summary
- Q&A

The Problem

- Fatigue induced human errors encompass various categories, including recognition errors (such as driver inattention and distractions), decision errors, performance errors, and non-performance errors.
- Fatigue and stress play pivotal roles in accidents stemming from human errors. These factors significantly influence reaction time, perception, and concentration
- THAT'S WHERE A.W.A.R.E. COMES IN







00.0

Fatigue Stats



- 43% of drivers reported often feeling fatigued while driving - Gittrux.org
- 65% feel fatigue while driving - ATRI
- 13% have fallen asleep while driving - ATRI
- 2.3-2.5 of fatality truck accidents involved fatigued drivers - NTSHA

AWARE

- The A.W.A.R.E. Program orchestrated by ATA Associates and PharmaFlight aims to combat work force errors using combined efforts of Physiological testing and verbal questionnaires
- Better than a yearly physical check up since this can be done as many times a month or Quarterly as the employer desires
- 15-minute test from start to finish for a whole-body analysis

A.W.A.R.E. in partnership with PharmaFlight- a physiological evaluation program which provides scientific protocol to enhance and maintain good performance and well-being in high stress working environments

- This initiative serves as a comprehensive physiological evaluation and feedback protocol designed to enhance and sustain optimal performance and well-being in demanding work environments. The primary objective is to bolster workers' physical and mental capacities, thereby mitigating human errors.

ATA Associates and Areas of Expertise

6000 Cases (3000 in Transportation)

Trucking/
Automotive

Testing Analysis

Marine/Maritime

Railroad

Aviation

Safety Consulting

Petrochemical

Amusements

Product Liability

Building &
Facility
Construction

Occupational
Industrial

Mass Transit

ATA Associates Industry Participation

- Truckload Carriers Association
- Texas Trucking Association
- Houston Council of Safety Professionals
- Texas Department of Public Safety
- Trucking Industry Defense Association
- American Bar Association MEGA conference
- Defense Research Institute
- Commercial Vehicle Safety Alliance
- Houston Community College Truck Driving School
- American Trucking Association/ATRI

ATA/Pharmaflight Partnership



- ATA Associates and PharmaFlight were introduced as a result of working together on a team of international experts chosen to conduct an aviation investigation
- While working on this investigation, ATA was introduced to the PHAPA device and the SPED protocols. With ATA Associates strong background in trucking, a collaboration targeting fatigue, stress and other job performance factor was started. Now we are introducing *AWARE* in partnership with PharmaFlight.



*International Science and Service Center in Debrecen, HUNGARY
Offsite Department of University of Debrecen*

Innovations in physiological and mental assessments of aviation crew, professional drivers, public transportation to battle challenges in fatigue risk management and crew shortages.

PharmaFlight Scientific History

- *Hungarian astronaut in space (1980 May)*
comprehensive, non-invasive physiological evaluation
- *Pannon Mobile ECG (1997-2007)*
physiological status monitoring during physical activity
- *Mercedes Benz Intelligent Drive (2016)*
assessment of physiological changes in a driving assisting vehicle
- *Memorandum of Understanding with ICAO (2016)*
research related to medical, physiological and mental aspects of aviation personnel

PharmaFlight Industry Participation

Public Transportation

- Increase safety through regular measurements
- Effective measurement of fatigue, stress and overload
- Monitoring long term lifestyle adjustments

Currently working with:

Debrecen Public Transport Ltd.

Budapest Public Transport Ltd.

Driver Training

- Measurement of applicants
- Power ranking for specific key abilities
- More effective filtering, reduced training time, reduced costs of training

Currently working with:

Koroknai Drivig School

Transsped Ltd.

Aviation Training

- Measurement of applicants
- Guiding applicants through training periods
- More effective filtering, reduced training time, reduced costs of training

Currently working with:

Hungarian Riot Police Helicopter Training

Hungarocontrol ATCO Provider

Professional Sports

- Maximizing performance through regular measurements
- Effective measurement of fatigue, stress and overload
- Monitoring long term physiological responses to training

Currently working with:

Professional tennis players

Professional hurdlers

AWARE and the devices

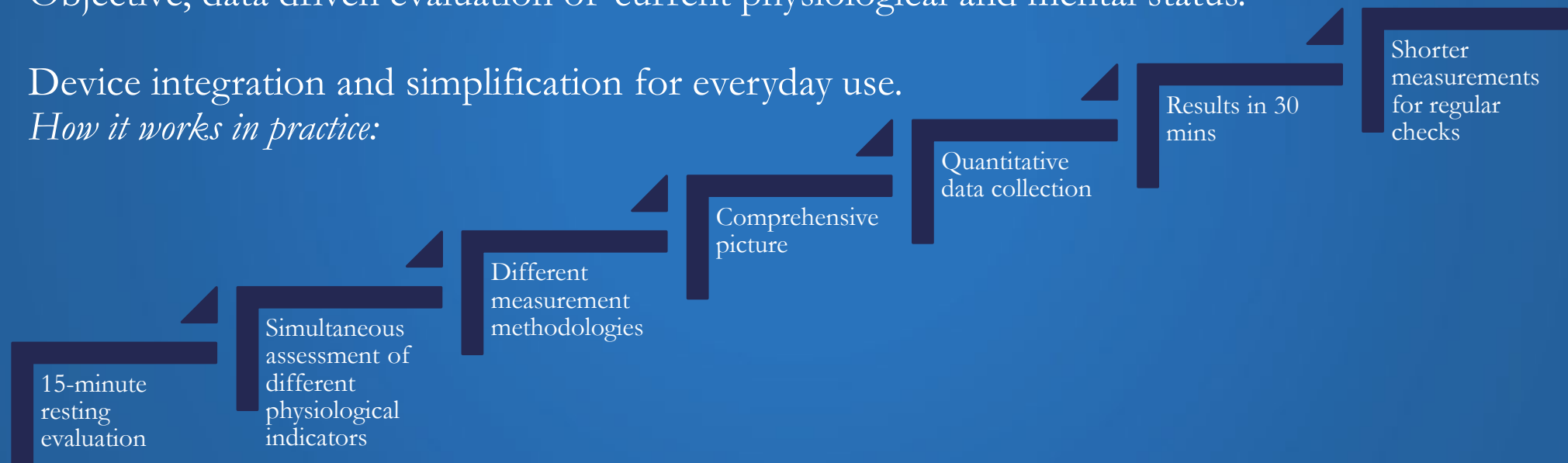
- The PharmaFlight SPED device and protocol derives its name from the acronym "Special Physiological Evaluations of Drivers." This tool has undergone a meticulous 12-year process of development, testing, and refinement
- With over 350,000 subjects to pool data from for a more precise evaluation
- Application of the SPED device are versatile and everchanging

The Device S.P.E.D. (Special Physiological Evaluation of Drivers)

Objective, data driven evaluation of current physiological and mental status.

Device integration and simplification for everyday use.

How it works in practice:



AWARE – Components

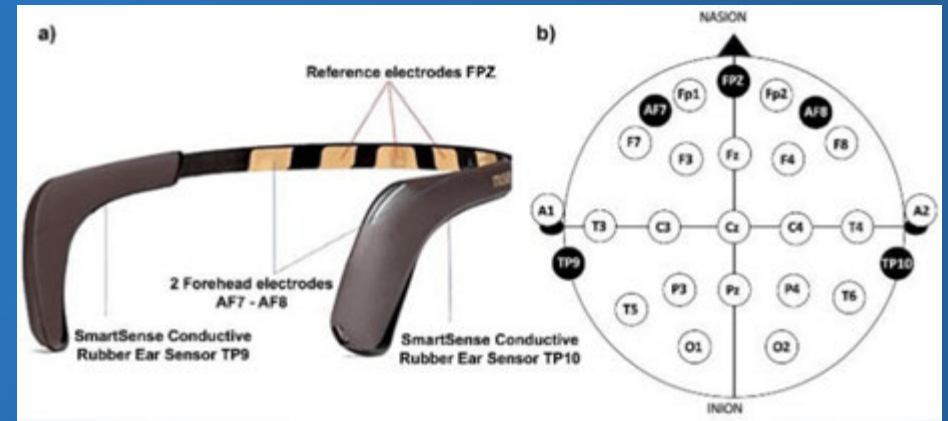
- EEG for electric function of the brain
- Temperature measurement
- ECG for Heart Rate Variability (HRV)



- Cardiovascular status assessment
- Near infrared spectroscopy for peripheral capillarization
- ECG for Heart Rate Variability (HRV)

AWARE – Components

- Dry Electrode EEG
 - A head band measures brainwaves- using EEG (Electroencephalogram) sensors to study the brain's function and cognitive process, consists of 7 sensors. These sensors help identify changes in electric function based on sleep cycles, fatigue and stress.



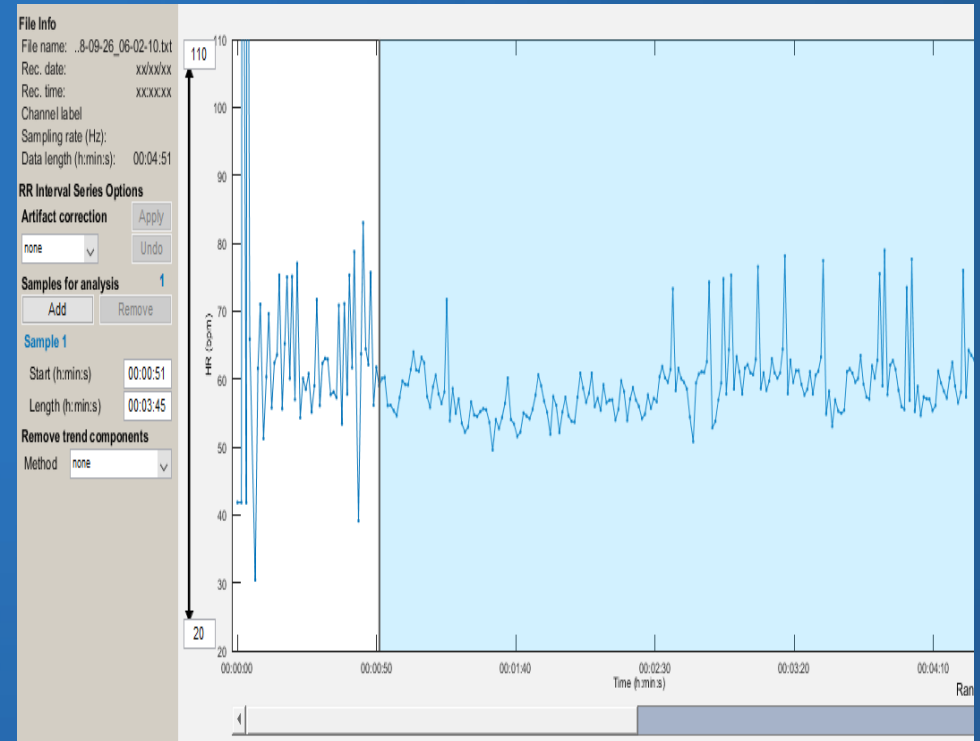
AWARE – Components

- Cardiovascular risk assessment
 - Invasively validated noninvasive method to basically measure how stiff arteries are. It also indicates cardiovascular risks which then will be a starting point to how you can make better choices to bring that risk down



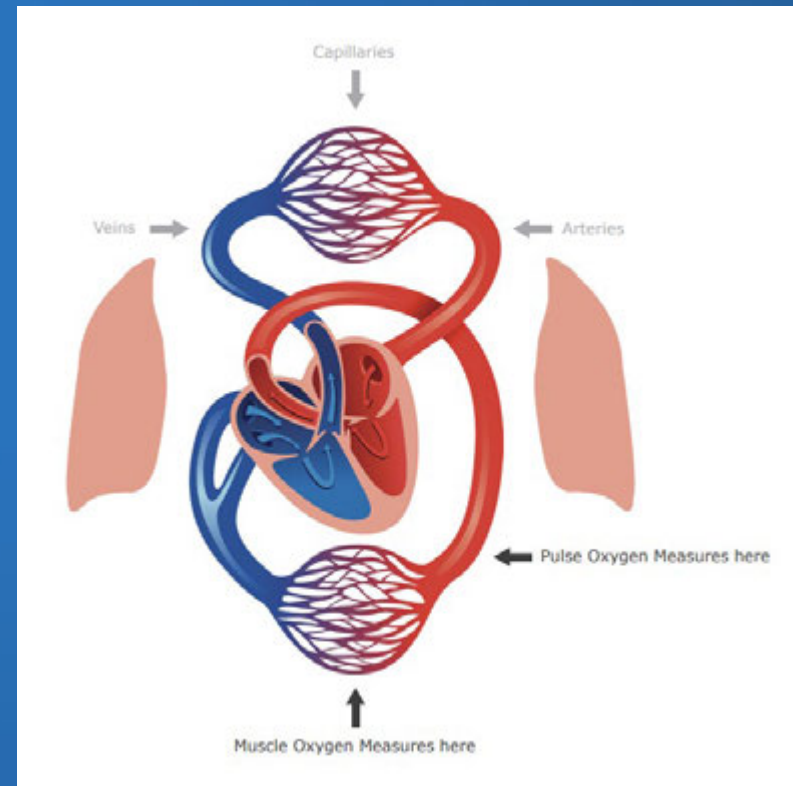
AWARE – Components

- ECG/ HRV
 - ECG provides information about the heart's electrical activity through repeated cardiac cycles.
 - HRV gives info on the peripheral nervous system. Basically it tells info on the body's ability to perform despite fatigue and stress.



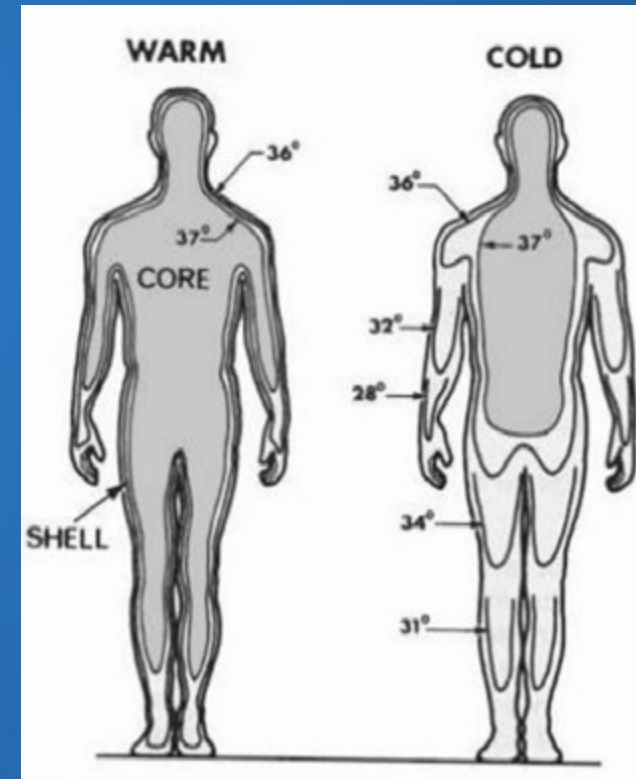
AWARE – Components

- NIRS
 - Measures your muscle oxygen uptake and release giving information on how healthy the oxygen flow is in the muscles and the periphery. It measures percentage of oxygenated hemoglobin in the user's capillaries for real time muscle oxygenation and hemoglobin index.



AWARE – Components

- Temperature sensor
 - Measures mean temperature of the body while giving feedback on overall temperature of body which will indicate more than you truly realize like, how fast your metabolism is running, when your body wants to go to sleep, how stressed out you are, and whether your metabolic health is improving.

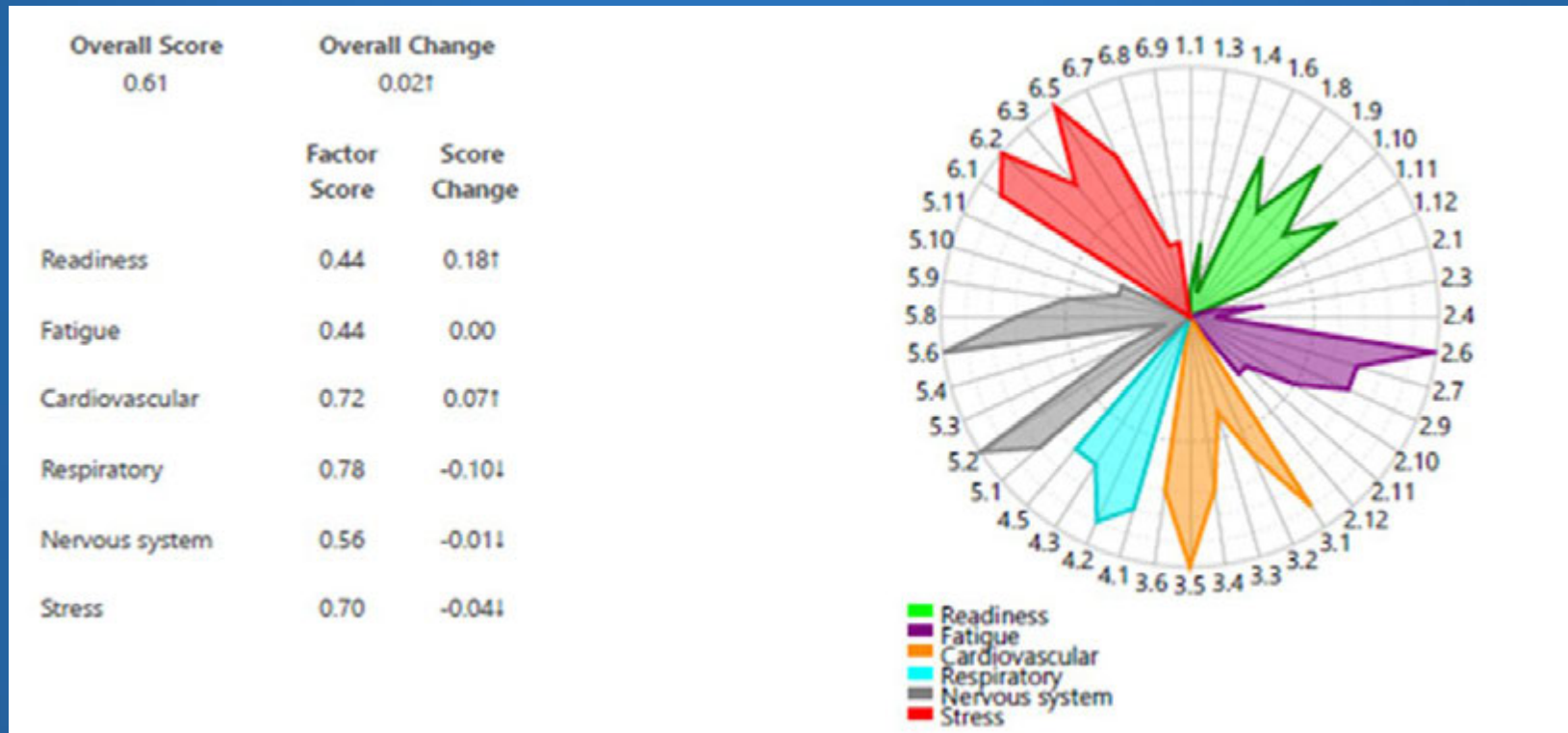


Test Protocols

- 6-minute resting evaluation
- Simultaneous assessment of different physiological indicators
- Different measurement methodologies
- Comprehensive picture
- Quantitative data collection
- Results in 30 mins
- Shorter measurements for regular checks



Results and Evaluation

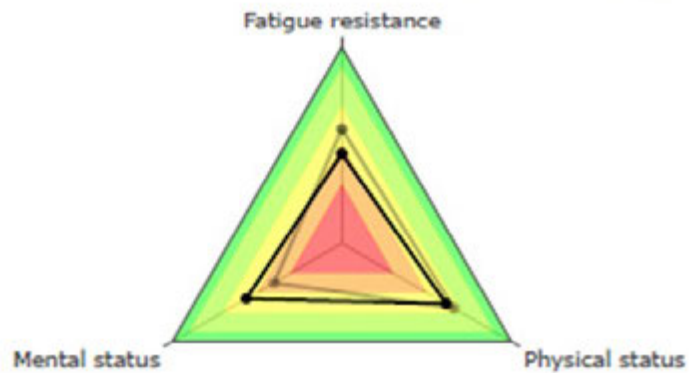


Results and Evaluation



Sample date: 2023-07-28 15:27

The scores range from 0 to 1, where 1 signifies the highest possible score and 0 signifies the lowest possible score. Factor scores are compound results from different measurement methods, the score does not indicate medical diagnostic scores, but the difference from optimal physiological states. Score change indicates the change in factor score from measurement to measurement. Multiple measurements from a single client can show trends and tendencies and therefore are recommended.



Your mental and physical status is average, your fatigue resistance shows diminished result.

Mental status has improved, physical status has slightly deteriorated, fatigue resistance has deteriorated since the previous measurement.

Advantages of the *AWARE* Program



- Mitigate stress and fatigue
- Improve general health of drivers
- Improve safety and performance
- Improve driver retention
- Reduce litigation risks

Current Exposure

- CVSA Conference 2023
- FMCSA
- Truckload Carriers Association
- TIDA 2022
- NASA/SAIC 2023
- NBC News 2022
- JetCo
- Virginia Tech Transportation Institute
- HCC Trucking School - Houston
- Upcoming
- Tri-State Safety Summit 2024
- Grant Submissions
 - FMCSA
 - VOLPE DOT

Summary

- ATA and PharmaFlight's goal is to provide a comprehensive process that uses proven scientific testing and protocols, resulting in safer conditions to the motoring public.
- The *AWARE* program should be considered as part of an overall fatigue management program, such as the North American Fatigue Management Program.



PHARMA FLIGHT

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Questions (1 of 2)



- Is there a lag time from assessment to receiving results? Does this practically limit determination of fitness to drive?
- I have heard/read where horizontal gaze nystagmus can/will be present in situations of extreme fatigue.
- Can you explain the cognitive and motor effects on drivers by sleep disruptions the days preceding work, how to measure/combat
- How much does sleep apnea play a part in fatigue
- Is there any research proving that 14 hours of drivetime is too much and contributing to severity of accidents?
- What steps are you taking towards making Pharma Flight technology more applicable to use in a vehicle?

Questions (1 of 2)



- How energy drinks, pills affect your health, body and driving on a daily usage plan, as an OTR truck driver?
- How can I best build my case to stakeholders about the use of fatigue management technology, that may be expensive up front?
- What is fatigue management?

Additional Questions?



Email additional questions to
Rodolfo.Giacoman@CVSA.org

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nafmp.org/webinars

Recording will be available there afterwards

Please complete anonymous survey on this session at the end of the webinar

Thank you!

The image features a large, white, stylized logo for CVSA (Commercial Vehicle Safety Alliance) centered over a blue-tinted photograph. The photograph shows the front of a white Peterbilt truck with a 'HEIL' sign on the top of the hood. Two police officers in dark uniforms are standing to the right of the truck, one looking at a clipboard. The background consists of trees and a clear sky. The overall scene is presented in a monochromatic blue color scheme.

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