Fatigue and Sleep Health Management

Rachel Lehen – Fit for Duty

AutoSense DRIVING SAFETY | seeingmachines | EROAD | Fit for Duty Managing Sleep Health

Introduction to fatigue

- Feeling tired at the end of the day is quite normal and is due to ‘sleep pressure’ that builds during the day and is directly related to the amount of time we have been awake (a bit like an hourglass egg-timer)

- Feeling sleepy is often a result of not achieving adequate sleep within the last 24/48 hrs. **You are consciously aware of this feeling (much like when you are hungry).** This sleepiness is normally rectified by a good nights sleep.

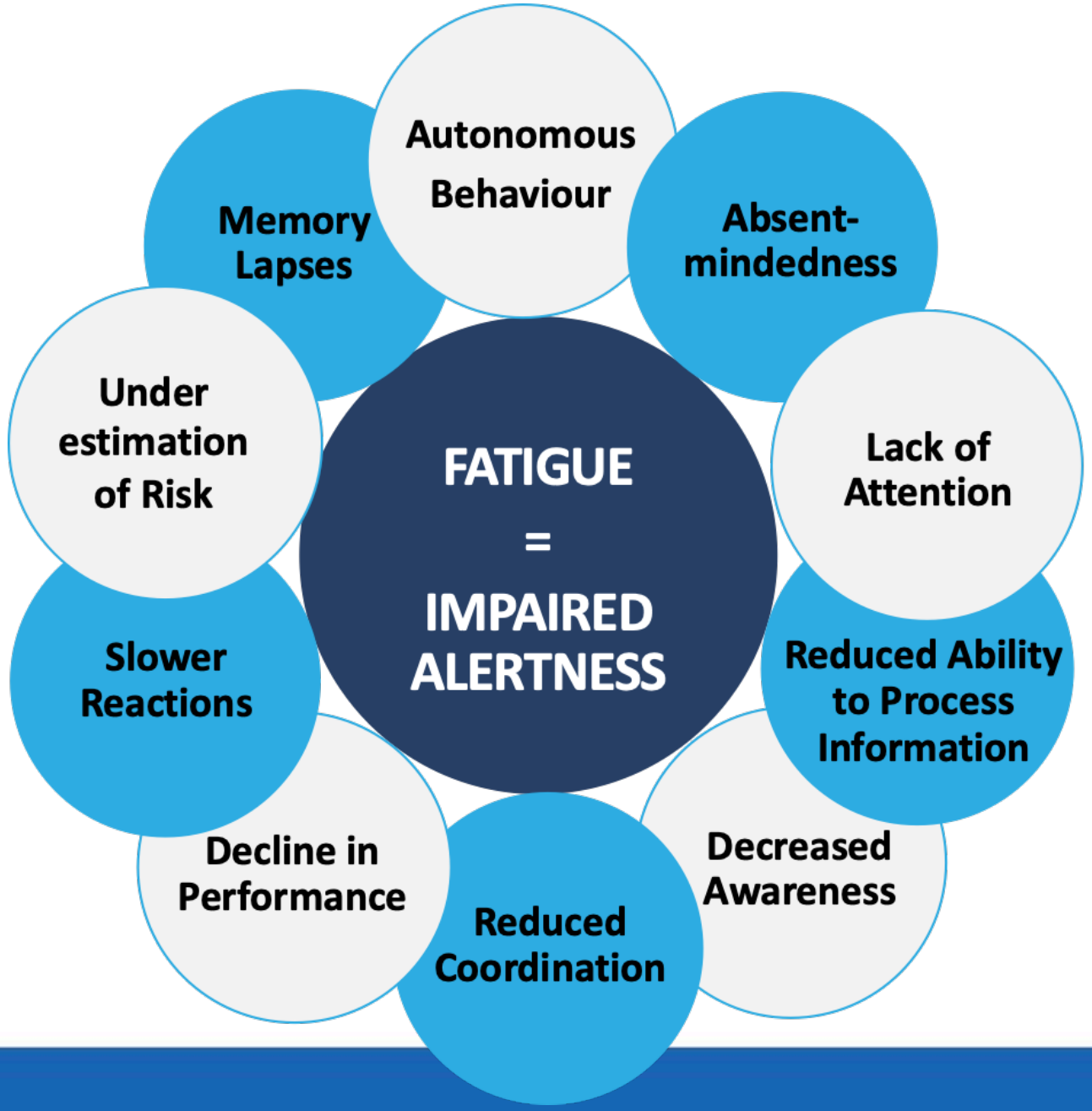
- Excessive Daytime Sleepiness can be an indication that there is a clinical sleep disorder such as Sleep Apnea or Narcolepsy.

Introduction to fatigue

- When we say ‘fatigue’, we’re talking about the **fatigue that’s caused by poor or inadequate sleep.**

- Known as **‘cognitive fatigue’**, it’s the fatigue that leads to reduced alertness, reaction time, and impaired decision-making on the job. **The kind that can seriously compromise workplace safety.**

- Fatigue affects the brains ability to interact with the body, and at its extremes, fatigue has the same effects as alcohol. **Being awake for 17 hours creates the same impairment as a BAC of 0.05%**


FATIGUE
=
IMPAIRED ALERTNESS
Autonomous Behaviour
Absent-mindedness
Lack of Attention
Reduced Ability to Process Information
Decreased Awareness
Reduced Coordination
Decline in Performance
Slower Reactions
Under estimation of Risk
Memory Lapses

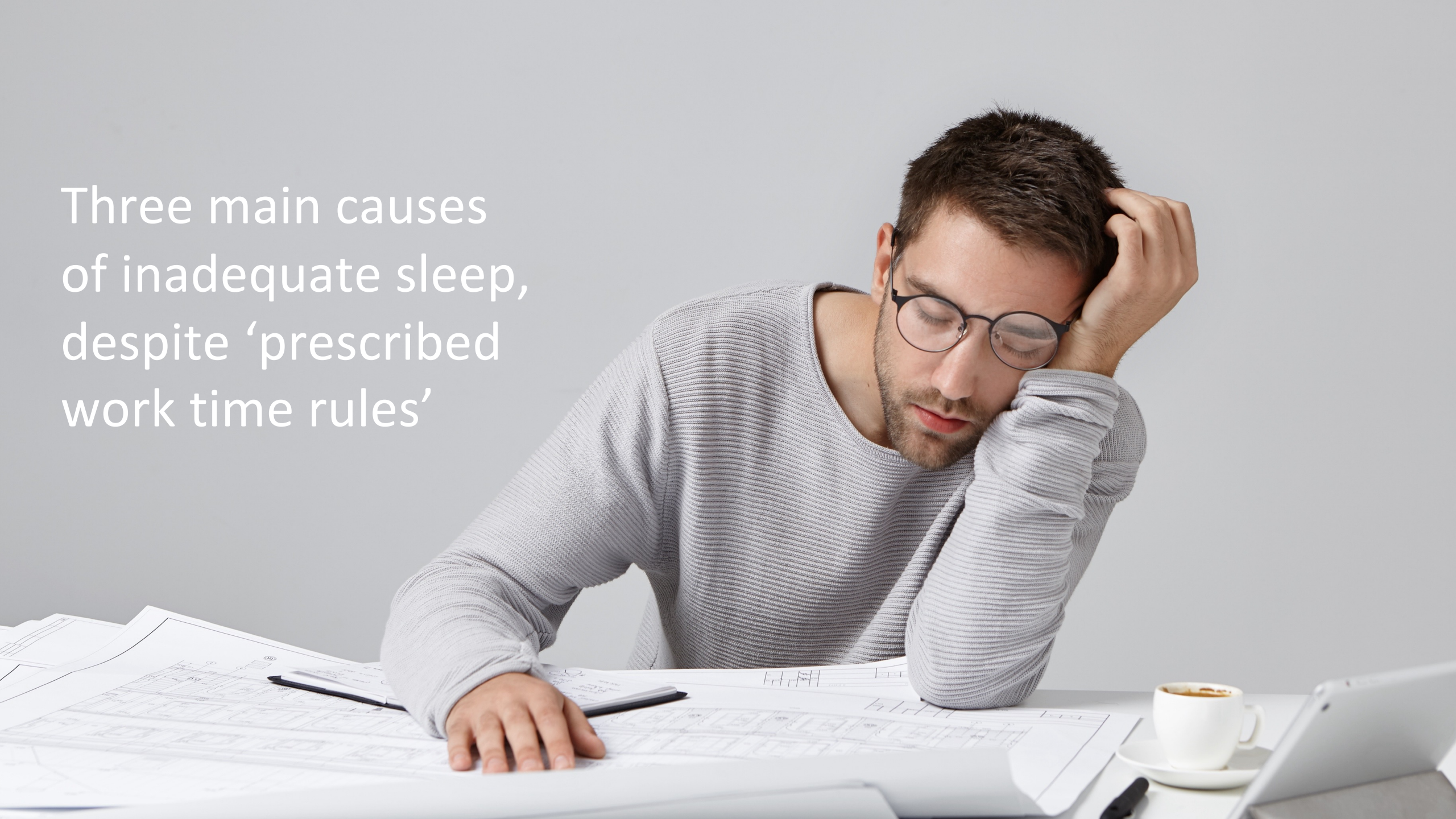
Key points:

- Fatigue is an unsafe condition in the workplace
- Like other risks factors, fatigue can be managed with adequate controls
- Safety and productivity in the workplace are intimately related to worker health
- Fatigue is related to duration of sleep and timing (circadian rhythm) of sleep
- Inadequate sleep is correlated with a variety of adverse medical outcomes
- Various shift work schedules can affect both the duration and the timing of sleep
- Inadequate duration of sleep is correlated with injury rate

“Hours-of-service” guidelines were an early attempt to address fatigue

According to Netflix CEO ‘the streaming giant’s biggest rival is sleep!’

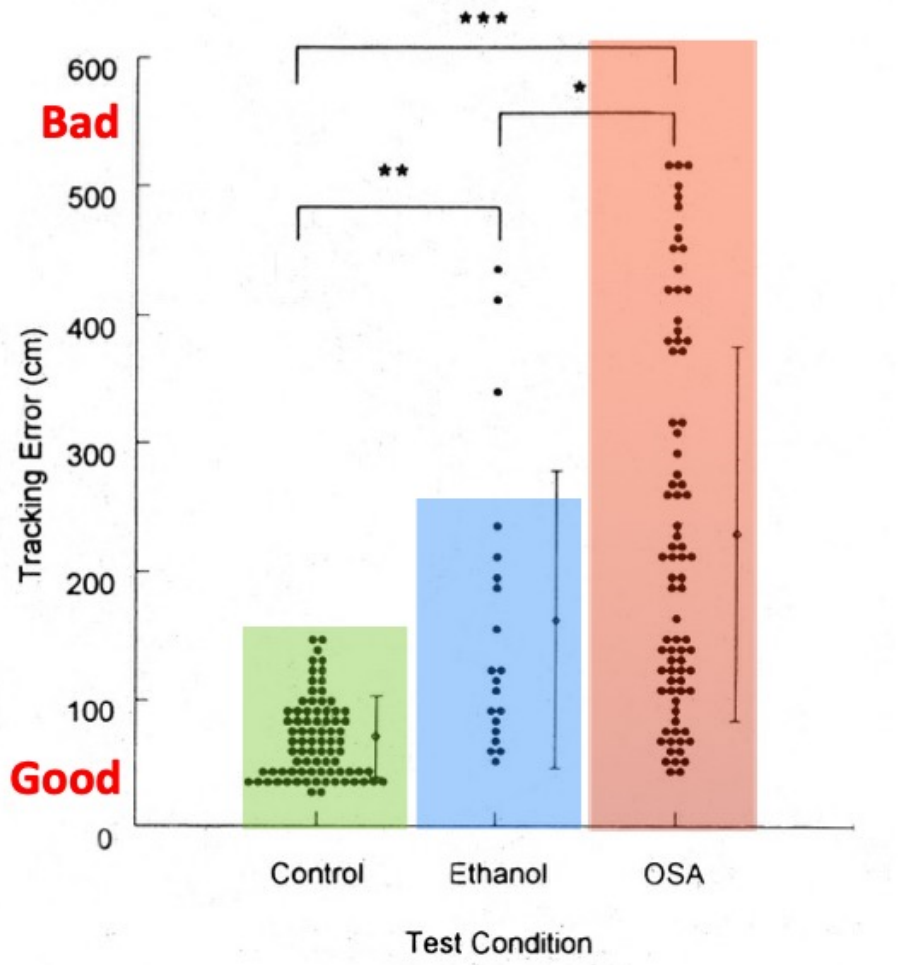
Three main causes of inadequate sleep, despite ‘prescribed work time rules’



- **Sleep disorders** such as insomnia, OSA, and RLS
- **Other health conditions** such as obesity, anxiety, depression, pain and side effects of mediations that impact on sleep quality and quantity; and
- **Lifestyle/behavioural factors** such as studying, working or partying too long, or shift-work and other forms of circadian disruption

Driving simulator performance

- Normal subjects (control)
- Influence of alcohol (ethanol) - *Normal subjects given enough alcohol to put them just over the legal limit of 0.05% BAC*
- Effects of Obstructive Sleep Apnea (OSA)

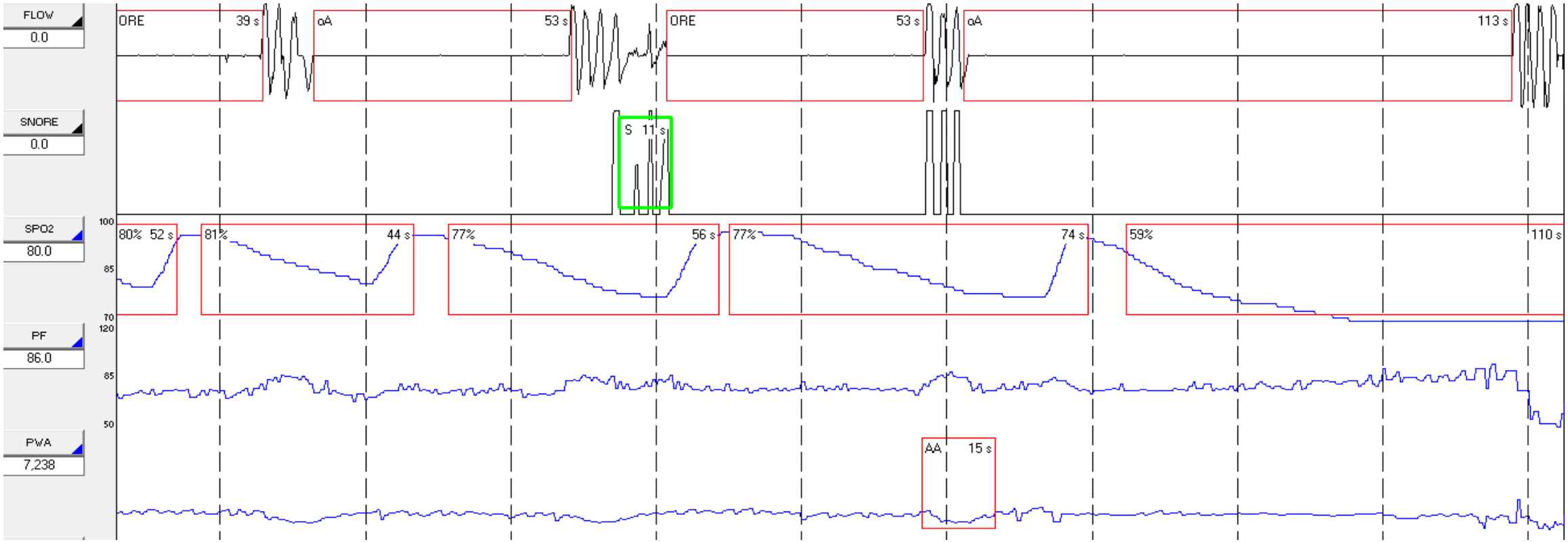


The dangers of micro-sleeps

A micro-sleep is an involuntary lapse into sleep that lasts around

2 - 15 SECONDS

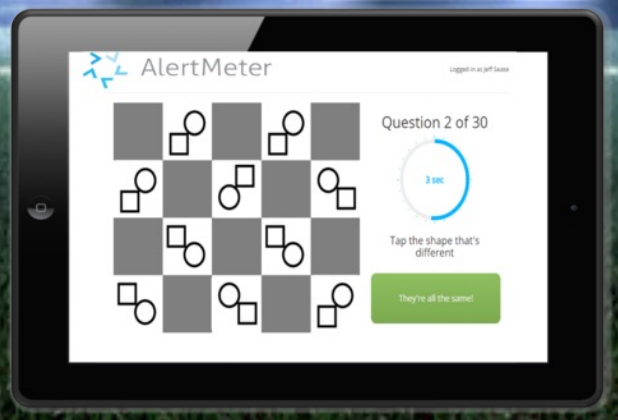
Driver observed on camera to have long blinks



Fatigue Risk Management System (FRMS)

- An FRMS should be part of a safety management system (SMS).
- An FRMS is data driven, science based, and subject to continuous improvements; in short, it is a system to manage the risks associated with fatigue.
- Fatigue risk management systems are designed to improve outcomes and are more flexible than duty-rest and hours-of-service regulations.

FLEET FIT



The 7 sections of the course will cover all you need to know about fatigue and shift work.

The course includes 14 unique videos to make the course easy to understand and complete.

These 7 sections cover:

COURSE SECTIONS

1. **Shift Work**
   Understand how shift work affects the body's biological rhythm.
2. **What is Fatigue?**
   Understand the difference between being tired, sleepy and fatigued. Learn the causes of fatigue and what you need to do at work to keep people safe.
3. **The Importance of Sleep**
   What happens when you don't get enough sleep, why we are more alert and calmer times of the day and the importance of getting 5 complete sleep cycles.
4. **How You Can Manage Your Shift!**
   Learn what foods to eat and when, how to keep going (it's not coffee!), and how to manage stress and light levels to maximise your performance.
5. **Journey Management**
   Plan your trips to work and home more safely. Avoid a microsleep!
6. **Family Matters**
   Shift work: What your family should be doing so you are not tired on your way to work.
7. **Health & Safety Legal Obligations**
   Understand the PCBU obligations in relation to managing the risk of fatigue.