

While also providing valuable information to the organisation, the primary purpose of the SmartCap is to give information directly to the operator in support of their own fatigue management. Through our direct involvement with SmartCap deployments around the globe, we often come across stories worth sharing. Here are a few of the positive experiences from SmartCap users.

### Undiagnosed sleep apnoea

Early in the trial phase of a SmartCap deployment, an operator was having a high number of Level 3+ and Level 4 alerts. The operator reported feeling “fine” and “normal”, however the alerts continued throughout the trial.

Discussions with the driver led to a voluntary medical examination, which upon referral to a sleep centre resulted in a diagnosis of severe sleep apnoea.

Since the diagnosis, the individual has commenced CPAP treatment, and the SmartCap alarms have all but disappeared. Not only is the driver and his spouse grateful that this undiagnosed condition is now being treated, but they are enjoying a greater quality of life as a result.

*“At first I was sceptical, and kind of frustrated. After seeing the specialist I found out I was waking up more than 100 times each hour. Since starting CPAP my life has totally changed. I feel great, and I owe it to SmartCap. The whole time I just assumed feeling tired was normal. Now I know it doesn’t have to be that way”.*

*- Truck driver, Western Australia.*

Sleep disorders, including sleep apnoea, have become a significant health issue in the United States. It is estimated that 22 million Americans suffer from sleep apnoea, with 80 percent of the cases of moderate and severe obstructive sleep apnoea undiagnosed. OSA, which represents the great preponderance of the cases, when left untreated can lead to high blood pressure, chronic heart failure, atrial fibrillation, stroke, and other cardiovascular problems; it is associated with type 2 diabetes and depression; and is a factor in many traffic accidents and accidents with heavy machinery, owing to the persistent drowsiness suffered by many OSA patients before the disease is recognized and treated. (American Sleep Apnoea Association)

### A more comfortable snooze

A rookie truck operator joined a long-established SmartCap site, and immediately started receiving an above average number of SmartCap fatigue alarms. What was most confusing was that the alarms were mostly occurring around 10am during day shift, whereas most night shifts were alarm free.

The operator had a face-to-face fatigue assessment with their supervisor which didn't reveal any risk factors. The conversation did however reveal that prior to the operator's recent career change to truck driving, they had been a night club DJ for the last 10 years.

Recognising that the operator wasn't used to a routine of sleeping at night in preparation for daytime work, the supervisor recommended some simple changes and suggestions. The operator decided to replace their old mattress with a newer, more comfortable one. Since then the operator has been getting a better night's sleep, a dramatic reduction in their SmartCap fatigue levels, and is now better equipped to cope with working a rotating roster.

*- Haul truck operator, New South Wales, Australia*

### Whistle while you work

Over the first few months of SmartCap use, a heavy equipment operator found that they were consistently receiving one or more fatigue alarms each shift, regardless of how they prepared for work. Working with site health & safety representatives, the operator decided to participate in a sleep study to rule out any underlying cause.

The results of the sleep study was a diagnosis of mild sleep apnoea, which explained that the alarms were a result of poor sleep quality.

On the advice of their doctor, the individual made some dramatic changes to their diet, and started exercising regularly. Just two weeks later, the operator started feeling more energetic, and noticed a drop in the fatigue alarm rate. We received a call from the operator saying:

*"I just wanted to thank you guys. Your SmartCap alarms gave me the kick I needed to get some help and to get healthy, and now I feel a million times better. For the first time in my life I'm finding myself singing in the car, and whistling in the truck! I've never felt this good. I'm really happy".*

*- Heavy equipment operator, New South Wales, Australia*

### Working out when to work out

After about one month of SmartCap use, a very health conscious mining technician noticed a pattern emerging – they were getting more Level 3+ alerts on shifts that followed an intense workout the day before. Though not overly concerned, they did some research online and learnt that a workout prior to rest can impact on quality of sleep.

As a result, the technician changed to a pre-shift workout routine, and was pleased to report that the Level 3+ alerts went away.

*"I thought doing gym work before shift would make me struggle through the shift, but I actually have more energy now. On top of that, I sleep like a baby!"*

*- Mining technician, New South Wales, Australia*

## A new language for safety

This story isn't related to a single individual, but instead to a group of workers. Through the first month of their exposure to SmartCap, we identified that some individuals were struggling with fatigue. With the support of their management, some have tried eating healthier and exercising, and we are already seeing a reduction in alarms. We expect that over time the alarms will reduce even further and they'll see the results they're hoping for.

More noticeable to us and to senior management was the change in conversation, which we think is great.

*'SmartCap puts a number to the vague concept of fatigue, and it allows our team to discuss fatigue. We've heard people say "I didn't sleep too well – I feel like a level 4 today"! Changing the conversation to a safety focus is what we've been trying to achieve for years, and SmartCap has made that possible'.*

*- Gas fields workforce, ND, USA.*